Industrial Equipment News

IEN

FOUNDED 1933

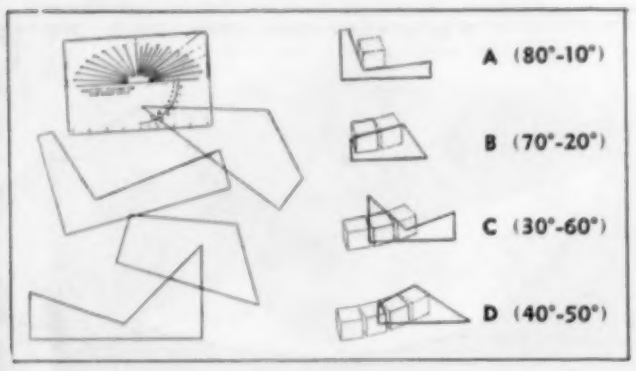
ORIGINAL REPORTER OF *What's New* IN EQUIPMENT, PARTS, MATERIALS

AFFILIATED WITH THOMAS REGISTER OF AMERICAN MANUFACTURERS

If you write maker identify as **IEN - 4902**

DRAFTING . . Plastic templates to produce three dimension drawings

Source: CHARLES BRUNING COMPANY
4700 Montrose Ave., Dept. IEN, Chicago 41, Ill.



Five pieces, $9.50

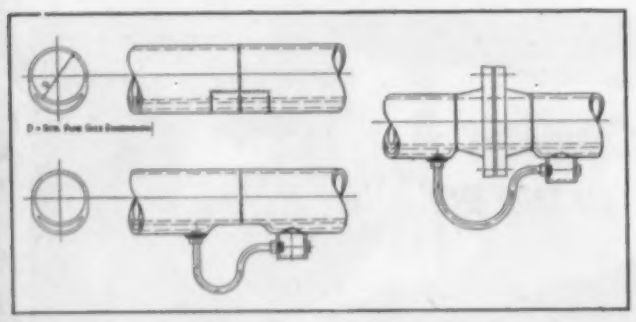
Five templates, each measuring about 8¼ in. in width by 5 in. in height, make up a new means to quickly produce a three-dimension drawing from an actual object, or assembly, or from plan drawings. The set includes a protractor and four angle templates in combinations of 80-10 deg., 70-20 deg., 30-60 deg., and 40-50 degrees. Each is made of laminated Vinylite with graduations sandwiched between the top and bottom faces where they cannot be rubbed out.

The five units, in combination, permit drawing a picture of an object from a practically unlimited number of view points. All components of the object will be correctly related to each other and to the complete assembly regardless of changes in their angular positions. The company has prepared an instruction manual covering basic examples of application to objects involving both straight lines and curves.

If you write maker identify as **IEN - 4903**

PIPE . . Steam traced aluminum for sluggish fluids requiring heat

Source: ALUMINUM CO. OF AMERICA
720 Alcoa Bldg., Dept. IEN, Pittsburgh 19, Pa.



Integral steam passage

A steam passage is extruded integrally with the main fluid passage in this new Unitrace aluminum pipe. The material is Alcoa 3S-F alloy. The pipe is slightly oval in cross-section, due to the crescent shaped steam passage, but it takes preformed insulation in standard sizes. It is available in Schedule 40, 2-in. size and takes 2½-in. insulation.

Illustrated are three methods that can be employed to join the pipe ends. Products that can be handled to advantage include naval stores, molten sulfur, ammonium nitrate solutions, glacial acetic acid, fatty acids, tar and pitch. The pipe is available from stock.

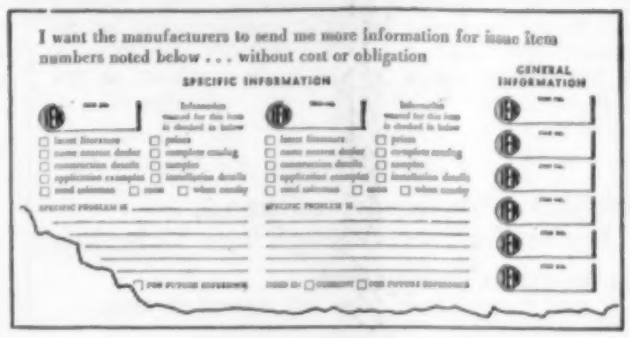
1933 - 1954

21 years of specialized product information service

See Page 4

If you write maker identify as **IEN - 4904**

YOUR INQUIRIES . . New service form far exceeds all "action" expectations



Fronting pages 17 and 113

We are "front paging" this item about IEN's new reader service form, previously described IEN-2397-53, because we want to call it particularly to your attention, advise you of a wholly unexpected situation and ask your help. Many more readers are using the new form, possibly because it gives them the opportunity, for the first time, to be specific about their interests in given products. Well over half of all who are using the form are filling in the specific information coupons as well as the general information blanks on other subjects.

The inquiry handling load has suddenly increased, both on IEN's inquiry forwarding setup and on the manufacturers to whom the specific information inquiries are being sent. Every call our representatives have made has found real enthusiasm on the manufacturer's part for inquiries to which he can do more than just send a piece of literature or advise a representative to call blind. At the same time the specific requests call for a new servicing setup on the manufacturer's part.

We are certain they will straighten themselves out and will catch up. We are working on the forwarding problem ourselves and have it about licked. In between, we are answering mail from both manufacturers and readers approving the new form. Here's just one, "Your new form will serve both seller and purchaser better than the former one, which was good. As Kipling would say, "You leave them, (many of your imitators), a mile and a 'arf behind".

Keep your inquiries coming, both specific and general. Bear with us for just a little time and we will be "riding the new track" to improve IEN's product information service another step. Let us know of any cases where your need is urgent and we will see that you get data quickly and completely.

If you write maker identify as **IEN - 4905**

DRIVE . . Multiple rib V-belt distributes load across grooved sheave

Source: RAYBESTOS-MANHATTAN INC.
61 Willett St., Dept. IEN, Passaic, N. J.

Bulletin, "Poly-V Drive"

Poly-V Drive is a new combination of V-grooved sheaves and a new endless rubber belt reinforced with synthetic cords and faced with a series of parallel V-ribs that ride in the sheave grooves. The new drive is designed for application where multiple V-belts have been required. It is, in effect, a single-unit multiple-V assembly. It eliminates need to match individual V-belts for a multiple drive. It provides, in a given width, approximately 50 per cent higher power rating than a multiple V-belt assembly of equivalent size belts.

Two sections, known as 187 and 375, are suited for sheaves measuring 3 in. or more in pitch diameter and drives requiring endless belt pitch length of 50 in. or more. No. 187 is designed for applications equivalent to A, B and C belt sections. No. 375 matches C, D and E sections. List price is the same general range as a multi-belt drive for equivalent service.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

MAY, 1954
VOL. 22 No. 5

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- ☐ *Production, Mr.* .....
- ☐ *Engineering, Mr.* .....
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- ☐ *Purchasing, Mr.* .....
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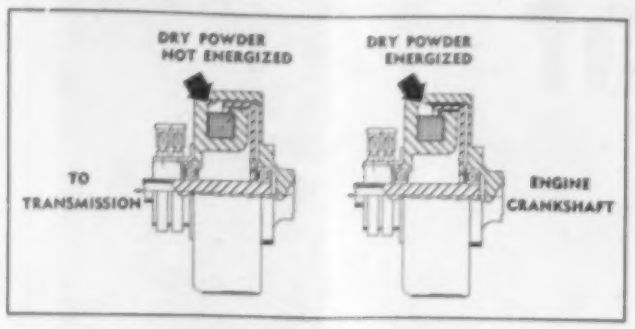
Address:
INDUSTRIAL EQUIPMENT NEWS
Thomas Publishing Company
A. J. GRANICK, Reader Service Manager
461 Eighth Avenue, New York 1, N. Y.

If you write maker identify as IEN - 4906

DRIVE . . Magnetic clutch or brake uses mix of iron and graphite particles

Source: EATON MFG. CO.
739 E. 140th St., Dept. IEN, Cleveland 10, Ohio



Technical data upon request

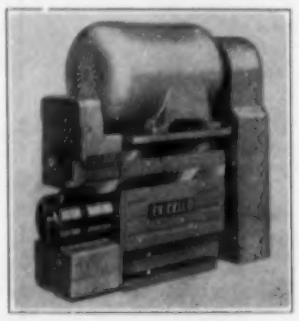
The company announces improved design in its line of magnetic clutches and brakes, previously described IEN-11512-50. With clarification of its patent position, it is now in production on certain smaller designs including automotive air conditioning drives and is prepared to consider larger applications in automotive and industrial fields.

The assembly employs a coil enclosed by a magnetic circuit and arranged so it can be energized through a switch or rheostat. Closing the coil circuit magnetizes fine metal particles that are mixed with dry additive lubricants. The particles are drawn together in matching surfaces between the driving and driven members. They are "frozen" or "unfrozen," in direct proportion to the amount of current passing through the coil, so precise control of rotating motion can be maintained either automatically or manually. The grip releases immediately, when the coil is de-energized, so the clutch or brake rides free without drag.

If you write maker identify as IEN - 4907

DRILLING . . Motor driven head, hydraulic feed through 8 or 12 inches

Source: EX-CELL-O CORPORATION
1200 Oakman Blvd., Dept. IEN, Detroit 32, Mich.



Style 22 unit

Single tools, multiple spindle heads, can be applied by this new quill type power unit for operations such as drilling, counterboring, reaming, spot facing. Drive capacity is 3 hp. Stroke measures 8 in. in a Style 22 or 12 in. in a companion Style 22-L. Control centers at a hydraulic valve that can be operated manually or by a solenoid. Each assembly is self-contained with its outside gasket mounted pump, close fitting cylinder assembly that does not require rings or packings, and with a quill that is sealed against internal hydraulic drain and external coolant.

The cycle can be initiated electrically or manually to include rapid approach, first and second feeds, reverse, rapid return and stop. Lengths of rapid approach and feed movements and the reverse and stop positions are controlled by adjustable dogs. Feed rate is adjustable by means of orifice dials protected by a hinged cover. The electrical equipment is enclosed in accessible position.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4908

. . . the remote controlled "Lo-Hite" Hydraulic Jack with detached independent pump (note fig. 1 above) is a natural because the ram, only 4½ inches high (note fig. 2) fits in places where a jack handle cannot be used. Connected by 8 feet of strong rubber hose, it can safely and quickly move 30 tons, 2 inches in any direction.

Ask your local distributor for the versatile "Lo-Hite" (No. 30-H-4.5) or write the world's oldest and largest manufacturer of lifting jacks for Bulletin AD32-M and name of nearest distributor, The Duff-Norton Manufacturing Co., P. O. Box 1889, Pittsburgh 30, Pa. Canadian plant—Toronto 6, Ontario.

DUFF-NORTON JACKS

"Giving Industry a Lift Since 1883"

If you write maker identify as IEN - 4909

"EXHIBIT A" For Textile Machinery

Designed for today's higher speeds . . . greater loads . . . increased production demands . . . New Departure textile bearings require little or no attention for years at a time!

Since introducing the first self-sealed **ball** bearing 27 years ago, New Departure has developed and tested more **ball** bearing seals and lubricants than any other manufacturer.

NOTHING ROLLS LIKE A BALL

NEW DEPARTURE
BALL BEARINGS
NEW DEPARTURE • DIVISION OF GENERAL MOTORS • BRISTOL, CONNECTICUT

If you write maker identify as IEN - 4910

Like an evil eye, fire is constantly on the lookout for unprotected hazards such as flammable liquids, electrical equipment, materials in process. Get protection that never sleeps. Guard every hazard in your plant with a Kidde Automatic Fire Extinguishing System.

Kidde

Walter Kidde & Company, Inc.
536 Main St., Belleville 9, N. J.

If you write maker identify as IEN - 4911

...of cutting production costs!

How does this simple act of *preplacing* a ring of EASY-FLO low-temperature silver brazing alloy cut production costs?

It's the key factor in a method of joining metals that reduces brazing to push-button simplicity and assures a steady stream of soundly brazed parts — with easily trained labor doing the whole job.

Will preplacing cut your production costs?

Without obligation one of our field engineers will look over your metal joining work and give you the answer. Just write and say when.

★ **At the WELDING SHOW, Buffalo, N. Y. Visit our Booth**

SEE the preplacement method in action on an actual production brazing setup. Also many other examples of silver brazing. Talk over your metal joining problems with our brazing engineers.

For the full facts in print, write for a copy of Bulletin 20

HANDY & HARMAN 82 Fulton St., New York 38, N. Y.
Distributors in Principal Cities. In Canada: Handy & Harman of Canada Ltd., Toronto

If you write maker identify as IEN - 4912

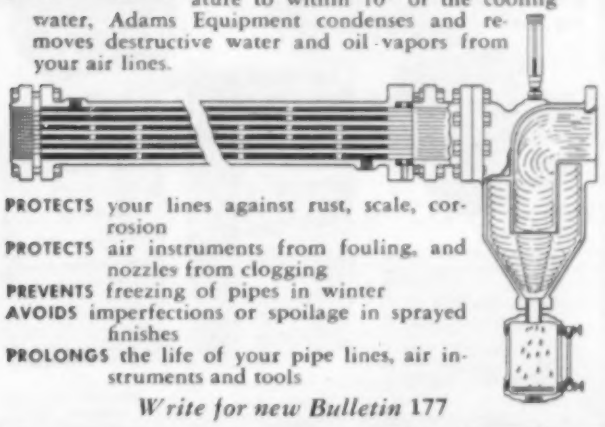
You Can be Sure of Clean Dry Air for your Compressed Air Tools

3500 Gallons

1 YEAR'S water extraction from air lines equipped with Adams Aftercooler and Cyclone Separator.

with **ADAMS** Aftercooler and Cyclone Separator

● Reducing compressed air temperature to within 10° of the cooling water, Adams Equipment condenses and removes destructive water and oil vapors from your air lines.



PROTECTS your lines against rust, scale, corrosion
PROTECTS air instruments from fouling, and nozzles from clogging
PREVENTS freezing of pipes in winter
AVOIDS imperfections or spoilage in sprayed finishes
PROLONGS the life of your pipe lines, air instruments and tools

Write for new Bulletin 177

R.P. ADAMS CO., INC. 219 E. PARK DRIVE BUFFALO 17, N. Y.

If you write maker identify as IEN - 4913

Only
ANACONDA TYPE TW
has new non-deteriorating "slipper" compound

- no pulling compound's necessary
- makes rewiring easier
- makes it easier to fish
- speeds work

For full information, see your Anaconda Sales Office or Distributor. *Anaconda Wire & Cable Company, 25 Broadway, New York 4, N. Y.*

the right cable for the job

ANACONDA® WIRE AND CABLE

If you write maker identify as IEN - 4914

Browning's NEW CHAIN COUPLING

STRONG AS THE SHAFT ITSELF!

No reboring . . . simple assembly . . . individually packaged

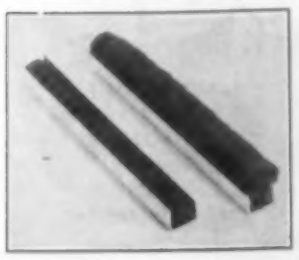
Browning's chain coupling with pearlitic malleable sprockets, hardened teeth and standard roller chain provides maximum capacity and longer life. Employs same split taper compression bushing used in other Browning power transmission products. Strong as the shaft itself! Choice of 9 stock sizes, 38 bores from your Browning distributor. Ask him or write us for Catalog V169.

Browning MANUFACTURING COMPANY MAYSVILLE, KENTUCKY

If you write maker identify as IEN - 4915

SEALING . . Rubber base material applies in joint, swells when heated

Source: MINNESOTA MINING & MFG. CO.
423 Piquette Ave., Dept. IEN, Detroit 2, Mich.



Supplied in strip form

Type EC-1209 is a new rubber base sealing material for application in a crack or joint between two sheet metal parts. It is shown in a formed channel, to the left in the illustration, and after it has been heated to the right. Exposure to 250 deg. F., for 40 min., will produce a swell of 70 to 80 per cent. Exposure for 15 min. at 350 deg. F. will cause the material to swell about 125 per cent over its original volume.

The cured material remains flexible in a temperature range between minus 20 and plus 150 deg. F. It will withstand temperatures to 300 deg. F. for short intervals without deterioration. It provides a good seal between mechanically held surfaces even when heat is not employed. An example is gasketing bolted castings. Packaging is in 30-in. lengths of ¼ in. diameter, each box containing about 810 linear feet.

If you write maker identify as IEN - 4916

LAYOUT . . Quick drying liquid blues work surface for layout lines

Source: SABRE METAL PRODUCTS INC.
8000 W. 47th St., Dept. IEN, Lyons, Ill.

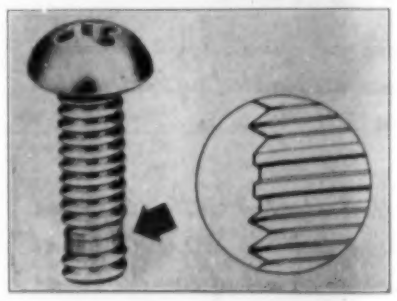
Packaged in Aerosol can

Spray application from its pressurized container spreads an even coating of the new Sabre Bluing liquid over a finished work surface on which a layout is to be scribed. The liquid dries quickly to produce a uniform background to layout work pieces, dies, tools, templates, patterns. Packaging is in an 11-oz. container.

If you write maker identify as IEN - 4917

FASTENING . . Lock screw with enlarged diameter on two threads

Source: SHAKEPROOF DIVISION
2501 N. Keelor Ave., Dept. IEN, Chicago 39, Ill.



Sample on request

Root Interference designates a new lock screw now in production by the company in a range of sizes and materials. The screw is particularly recommended to anchor the washer in a faucet so it will not work loose in service.

Two of the threads, back several threads from the end, carry enlarged root diameters and flattened crests as shown in the illustration. The arrangement permits easy starting and then tightening to hold in a standard threaded hole.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4918

SAFETY EQUIPMENT FOR ALL INDUSTRIES

SAFE STORAGE FOR EXCELSIOR AND OTHER INFLAMMABLE MATERIALS

Meet all fire regulations of Insurance Companies, State and Municipal authorities.

IPCO SAFETY STORAGE BINS

For shipping and receiving rooms and other plant areas where excelsior, paper, rags, paint and other combustibles are used. Sturdily manufactured of heavy gauge galvanized iron with reinforced angle corners. Fitted with fusible link so cover is allowed to close automatically in case of fire.

WRITE FOR BULLETIN NO. 63

IPCO *Safety Equipment for all Industries*
INDUSTRIAL PRODUCTS COMPANY
2801 N. FOURTH STREET • PHILADELPHIA 33, PA.

If you write maker identify as IEN - 4919

LUBRICATION ECONOMY

"We heartily recommend LUBRIPLATE LUBRICANTS"

so says Porter-Cable Machine Co., a leading manufacturer of portable tools. They consider effective lubrication so important to good tool operation, they have arranged to have a LUBRIPLATE Lubricant packed in tubes under their label and sell the tubes through their dealers.

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2. LUBRIPLATE prevents rust and corrosion
3. LUBRIPLATE is economical to use

Write today for case histories of savings made through the use of LUBRIPLATE in your industry.

LUBRIPLATE DIVISION
Fiske Brothers Refining Co.
Newark 5, N.J.—Toledo 5, Ohio

The Different LUBRICANT!

DEALERS EVERYWHERE, consult your Classified Telephone Book

If you write maker identify as IEN - 4920

CASTELL push button LOCKTITE lead holder has PERFECT BALANCE

Perfect balance makes Push Button CASTELL LOCKTITE Holder the king of its class.

Exclusive collet holds lead in **bull dog grip,** preventing slipping or turning.

No graphite dust stains your fingers —because with one-hand push-button action you extend and retract the lead. *No need to touch graphite.* Comfortable "wood-pencil" feel—not metallic.

Equipped with easily-replaced clutch, giving your LOCKTITE indefinite life.

Imported CASTELL 9030 Lead inserted in your LOCKTITE Holder gives you the combination for brilliant results on your drawing board. Ask your Dealer for both — LOCKTITE Holder and Imported CASTELL 9030 Lead in 19 degrees, 7B to 10H.

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1752 Illustrations
1057 Tables
803 Articles
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If you write maker identify as IEN - 4922

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A LITTLE DOES A LOT

You may have heard about a highly successful solid-film lubricant which is giving remarkable results in the shop and in the field.

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Moly-sulfide
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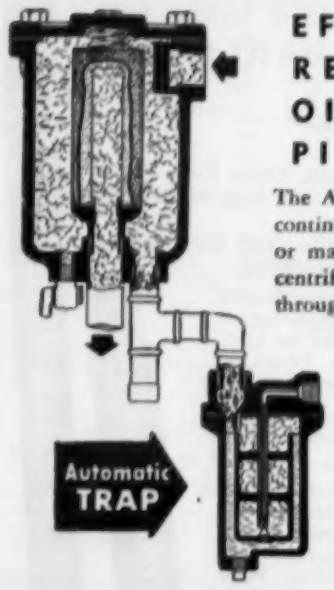
Poro-Stone Filtration
FOR COMPRESSED AIR



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The Adams *Poro-Stone* Filter gives continuous service without attention or maintenance expense. Efficient centrifugal separation *plus* diffusion through Poro-Stone, removes contamination completely without pressure loss. Automatic Trap eliminates attention and assures continuous and efficient filter operations.

Write for complete data Bulletin 177

R. P. ADAMS CO., Inc.
219 E. Park Drive • Buffalo 17, N. Y.

ADAMS *Poro-Stone* AIR FILTER

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with CRANE Quality
Unions and Union Fittings

No. 1280
Female Union
Brass to Iron Seat

No. 1282,
90° Elbow
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Brass to Iron Seat

There *is* a difference in 150-pound malleable iron unions and union fittings. You'll see it the first time you pipe a line with Crane items exclusively. When you're ready to pull up the last union, there's no need for forced alignment. Crane tappings are what they should be —straight, right in dead center. Threading is clean cut, ready for quick starts.

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Industrial Equipment News

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VOL. 22 MAY, 1954 No. 5

1933-1954

Twenty-one years of specialized product information service originated by Industrial Equipment News

252

Monthly issues that started with 16 pages and an "invitation list" to 30,000 plant operating men active in all of the divisions of industry

21,930

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W. E. Irish

If you write maker identify as IEN - 4925

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If you write maker identify as IEN - 4926

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Save Time
Cut Costs

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SIZE: 68" high 27" wide 29" base
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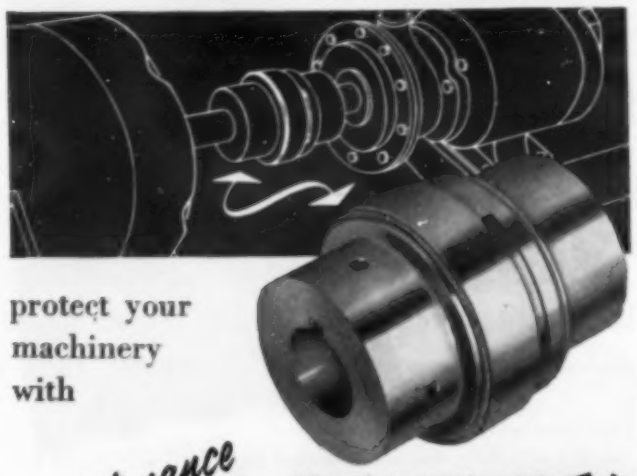

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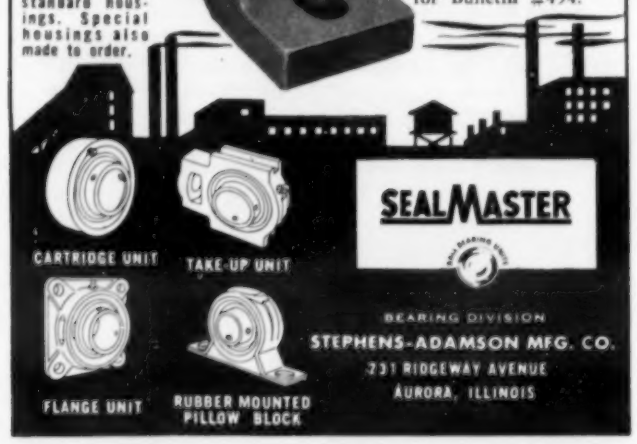
Important factors in the performance of any product or manufacturing process involving motion are the bearing units carrying the load. The name SEALMASTER stamped on the bearing units of every machine you buy, use or build is your assurance of performance and long life. There is a SEALMASTER Bearing Unit to meet your every requirement.

SEALMASTER Bearing Units are available in a wide selection of standard housings. Special housings also made to order.

SEALMASTER Dealers are located in ALL principal cities. Write for Bulletin #454.



SEALMASTER

BEARING DIVISION
STEPHENS-ADAMSON MFG. CO.
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AURORA, ILLINOIS

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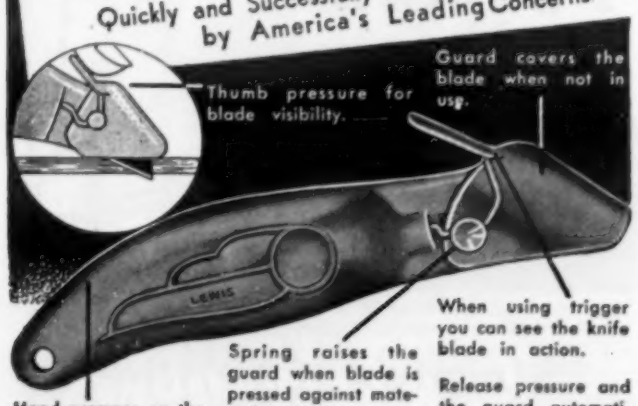
Quickly and Successfully Adopted for Use by America's Leading Concerns



No other cutting tool like it. Eliminates the hazards of exposed cutting blades. You must operate it to appreciate its swift and sharp cutting . . . always automatically ready for use. Trigger action gives full blade visibility with safety.

Retail Price $1.50

FLASH BOX OPENER CO., Inc.
52 W. Houston St. • New York 12, N. Y.

If you write maker identify as IEN - 4931

METER . . Reads rate of flow in a conductive liquid, ½ to 2 inches

Source: BOWSER INCORPORATED
1338 Creighton Ave., Dept. IEN, Fort Wayne 2, Ind.

Figure 950

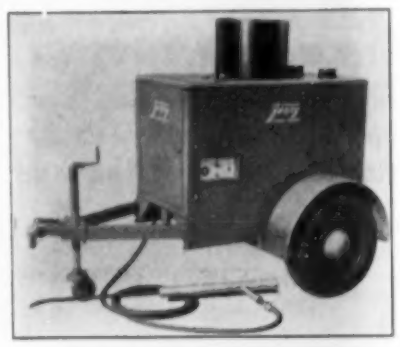
Xactronic trade names a new flow meter that measures the volumetric flow of conductive liquids by electro-magnetic induction. The meter will handle water, aqueous solutions, acids, slurries, emulsions, liquids containing solids, molten salts. Accuracy is within 1 per cent of full scale reading and is not affected by changes in viscosity, density, temperature or turbulence in the liquid flow being handled.

The metering element consists of a stainless steel tube with a teflon liner, a pair of metallic electrodes and an electromagnet. Liquid, passing through the tube, induces a voltage proportional to the linear velocity of the flow stream. This induced voltage is indicated or recorded on an electrically connected instrument that can be positioned in any desired location. The magnetic field is provided by connection to a 110-volt 60-cycle ac. line. Operation is independent of line voltage variation. Installation can be made to control the rate of flow as well as to indicate and record it.

If you write maker identify as IEN - 4932

CLEANING . . Steam spray machine is oil fired to deliver hot solvent

Source: HOMESTEAD VALVE MFG. CO.
Box 85, Dept. IEN, Coraopolis, Pa.



Will serve four guns

Series 3000 is a new assembly in the company's line of Hypressure Jenny cleaning machines. It has output capacity of 300 gph. with operating pressure at 80 to 110 pounds. It mounts two tanks rating 26 gal. each, one for fuel oil and one for solvent. Consumption is to 7 gph. of fuel oil and to 10 gph. of solvent. Delivery is through a 25-ft. length of asbestos-steel vapor hose and a Cool-Grip cleaning gun. A 4-in. flat nozzle and an interchangeable round nozzle are standard equipment.

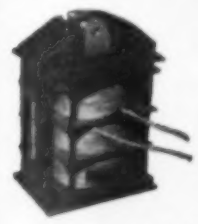
The machine can be specified in stationary, shop portable, or trailer mounted design. Corresponding weights are 775, 975 and 1,175 pounds. The shop portable design measures 64 by 47 by 61 inches. Drive can be supplied by a gasoline engine or a 1-hp. 110-volt 60-cycle ac. motor. Control centers at a panel on the side of the housing. Electric ignition, a double-pole starting switch with thermal overload protection, an updraft combustion chamber, positive displacement piston type pumps, pressure atomizing fuel oil burner are standard.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . Ratings . . See Page 50

If you write maker identify as IEN - 4933

SOLENOIDS

A-128 solenoid; 18 lbs. at 85% voltage; 3" stroke.



AS-427 solenoid; 14 lbs. at 85% voltage; 2.5" stroke; 600 strokes per minute.

A-100 line of pure D.C. solenoids without cut-out switch; ranging from 1.5 lbs. to 100 lbs.

AS-400 line of high speed solenoids; ranging from 1.5 lbs. to 14.0 lbs. Speed up to 600 strokes per minute.

We recommend that you get acquainted with these two lines of solenoids. They can do things for you that you never thought could be done.

We make 44 other standard lines of solenoids. Also solenoid brakes up to 24,000 ft-lbs. torque capacity.

See our catalogs in Sweet's Catalog Service. Ask for more information.

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If you write maker identify as IEN - 4934

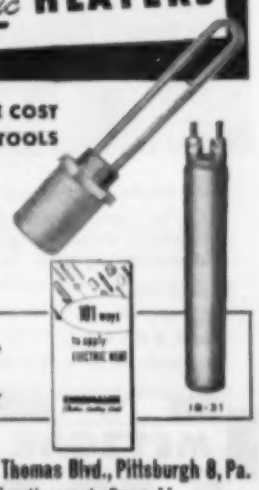
15,000 TYPES, SIZES & RATINGS

to meet your heating needs!

CHROMALOX *Electric* HEATERS

INCREASE PRODUCTION . . . DECREASE COST WITH THESE LOW-COST PRODUCTION TOOLS

Use Chromalox Electric Heaters to heat liquids, air and gases. Use them to heat platens, dies, molds and moving metal parts. Use them anywhere you want fast, economical and easy-to-control heat for production line processing. Chromalox Heaters are simple to install, efficient, come in types, sizes and ratings for working temperatures up to 1100° F. Most are available from stock.



FOR IDEAS ON HOW TO USE CHROMALOX HEATERS
WRITE FOR THIS HANDBOOK

Industrial Div., EDWIN L. WIEGAND CO., 7505 Thomas Blvd., Pittsburgh 8, Pa.

See Chromalox Radiant Heaters Advertisement, Page 11

CHROMALOX
ELECTRIC HEAT FOR MODERN INDUSTRY

If you write maker identify as IEN - 4935

DO PRODUCTION MARKING JOBS

SAFELY AND FAST

Mecco **SAFETY**
"WEDGE-GRIP"

STEEL TYPE HOLDER

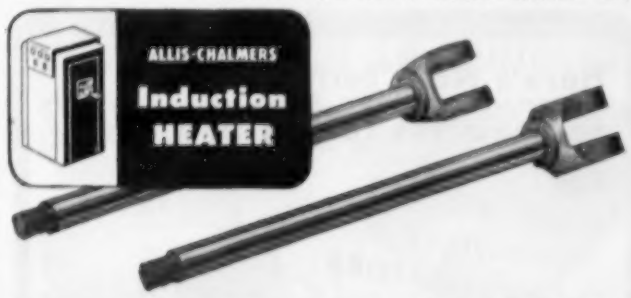
Fast TYPE CHANGE FEATURE

Ideal for use on marking jobs requiring interchangeable type, this unit features a patented Safety Snap for speed and ease in changing type. Made to order in any size, it is made of Mecco Safety Steel to prevent spalling and mushrooming.

Write for Catalog 100

Mecco **SAFETY** MARKING TOOLS **M.E.CUNNINGHAM CO.**
1039 CHATEAU STREET, PITTSBURGH 33, PA.

If you write maker identify as IEN - 4936



Brazing Speed Up 800%

WHEN HIGH PRODUCTION Allis-Chalmers induction heaters replaced torch brazing methods in an aircraft plant, eight parts, like those above, were brazed in the time it formerly took for one.

In addition, percentage of rejects due to warpage was cut 80%. Reason? Heat is induced rapidly to uniform, accurately controlled depth. Center or core of metal remains relatively cool so expansion is minimized . . . warpage reduced.

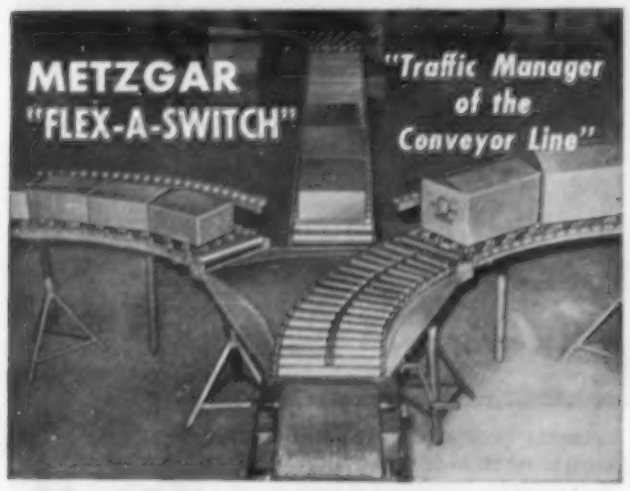
VERSATILE, TOO! The two Allis-Chalmers induction heaters are used on a wide variety of jobs, including brazing piston rods on clevis assemblies, brazing caps on hydraulic ram cylinders, and case hardening bearing surfaces on hydraulic valve parts, connecting rods and others.

A simple change of work coils is all that's needed to change from one job to another.

Find out what Allis-Chalmers induction heaters can do to speed production, improve quality in your plant. Call your nearby Allis-Chalmers district office or write Allis-Chalmers, Milwaukee 1, Wisconsin. A-4172

ALLIS-CHALMERS

If you write maker identify as IEN - 4937



Gets maximum efficiency from your conveyor system.

Ideal for switching production lines to various machines for isle system warehousing, assembling orders and all gathering and distributing uses.

Standard Widths:
11½", 15", 18"
Through & 45° R & L.
Spur Switch: 45° R. or L. & Through.

May be furnished with electric or pneumatic Remote Control.

● WRITE FOR PRICES ●

METZGAR CONVEYOR CO.

417 DOUGLAS N. W.

MFRS. OF WHEEL & ROLLER GRAVITY & LIVE ROLLER CONVEYORS • POWER BELT CONVEYORS • SWITCHES • ACCESSORIES & REEL DOLLIES

GRAND RAPIDS 4, MICH.

If you write maker identify as IEN - 4938

AUTOMATIC "UP AND OVER" TRANSFER

SAVES $30,000 PER YEAR

Here is an "Up-and-Over" system that eliminates 72 hours of handling labor per day. It automatically transfers 180 full bobbin boxes from three floors of one mill to one floor of another and returns the empties. Estimated savings in labor, trucks, floors and traffic congestion run upwards of $30,000 per year.

It is another of the many examples of American Mono-Rail engineering for low-cost handling within space limitation. Let one of our field representatives explain further the versatility and low maintenance of American Mono-Rail equipment.

THE AMERICAN MONORAIL COMPANY

13111 ATHENS AVENUE • CLEVELAND 7, OHIO

If you write maker identify as IEN - 4939

Here's NEW Technical Data on Stainless Tubing and Pipe!

for
DESIGNERS
ENGINEERS
FABRICATORS

This new bulletin offers valuable help in applying Carpenter Stainless Tubing and Pipe to the solution of your designing, engineering, fabricating and corrosion-resistance problems.

Contains complete information on:

- Properties
- Specifications
- Sizes and Shapes
- Grades and Finishes
- Lengths
- Tolerances
- Corrosion Resistance
- Pressures
- Heat Resistance
- Weights

Write today for this new, helpful Condensed Technical Data Bulletin.

THE CARPENTER STEEL COMPANY
Alloy Tube Division, Union, New Jersey

If you write maker identify as IEN - 4940

WOODWORKING . . Boring bit for application with power equipment

Source: STANLEY TOOLS
480 Myrtle St., Dept. IEN, New Britain, Conn.

"50-50" Brad-Screw Point

Set 125A is a new assembly of five wood boring bits ranging from ¼ to ½ in. in diameter. Each bit is equipped with a threaded point that has been flattened on the sides so the bit can be withdrawn immediately from any depth. The shank fits a ¼-in. or larger chuck. Holes can be bored to 3 in. in depth in restricted areas. Each bit is heat treated to hold its cutting edge. List price is $4.50 per set.

If you write maker identify as IEN - 4941

CORROSION PROOFING . . Precipitate in coal tar solvent to brush on metal

Source: U. S. STEEL SUPPLY DIVISION
208 S. LaSalle St., Dept. IEN, Chicago 4, Ill.

Technical data upon request

Blakled trade names a new black colloidal precipitant resulting from a chemical combining of ingredients, one of which is lead. This precipitant is thinned with a coal tar solvent. It is a colloidal mass of one molecular substance and is not a mixture of different materials. It is brushed on steel surfaces that are to be protected against corrosion. It "fills in" the surface, replacing moisture and air, to eliminate the principal causes of corrosion. It can be applied to wet corroded surfaces that have been brushed and to dry or light mill scaled steel. It dries in about an hour. It also can be applied by dipping or spraying. The company announces its appointment as sole distributor.

If you write maker identify as IEN - 4942

MAGNET . . Battery operated for lifting duty rates 1 ton load

Source: SUNDSTRAND MACHINE TOOL CO.
2531 11th St., Dept. IEN, Rockford, Ill.

Switch actuated

The housing of this new electro magnet carries a 6-volt vehicle battery, an operating switch, a dial to indicate the need for recharging and a receptacle for a trickle charger plug. A 4-amp. charger is available as extra equipment to plug into a 110-volt power source. The magnet surface, beneath the housing, measures 7 by 12½ inches. Height of the complete unit is 12½ inches. Weight is 120 pounds.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4943

When it has to Run for Years and Years

WITHOUT FAILURE

MAKE IT A LEIMAN VACUUM AND PRESSURE PUMP

Leiman users say this:

"Almost continuous operation, 24 hours a day for 21 years"

"Using Leiman pumps on 350 machines. No pump has given a moment's trouble"

4-WING TYPE. Vacuums to 20"; pressures to 15 lbs.; displacement to 162 cfm. Wings take up their own wear, insure positive pressure or vacuum.

2-WING TYPE. Vacuums to 29.9"; pressures to 25 lbs.; displacement to 40.8 cfm. Automatic wing adjuster forces steel blades to meet cylinder wall, no sticking.

Write for 16-page catalog and blueprints of typical applications on Leiman rotary positive pumps—choice of industry since 1889.

SEE OUR CATALOG IN SWEETS FILE

LEIMAN BROS., INC.

166 Christie Street, Newark 5, N. J.

If you write maker identify as IEN - 4944

Send for this

FREE BULLETIN ON CASTINGS

Tells Why
Shows How
Inco Castings are...

CAST TO LAST
UNDER DESTRUCTIVE SERVICE CONDITIONS

If you want longer casting life, here's a bulletin that tells you how to get it.

Just off the press, *Cast to Last* describes and pictures typical applications for Inco Nickel Alloy castings. The service records reported by others may suggest a way *you* can benefit by using castings of Nickel, Monel®, Inconel®, "S"® Monel or "H"® Monel.

All of these metals are outstanding in strength and corrosion resistance. In addition, each has certain special properties, such as resistance to galling, ability to protect product purity, or ability to withstand wear, abrasion, cavitation-erosion or high temperature oxidation.

For your copy of *Cast to Last*, simply circle our number on the I.E.N. reply card.

INCO TRADE MARK

THE INTERNATIONAL NICKEL COMPANY, INC.
75 Wall Street New York 5, N. Y.

If you write maker identify as IEN - 4945

13 head sizes—ONE welding pressure

New PREST-O-WELD welding heads ALL operate at same regulator setting

Spend more of your time welding. Set your regulators once and weld all day without touching them again, no matter how many head changes you make. PREST-O-WELD Welding Heads in 13 sizes (2 to 100 cu. ft. per hour capacity), all operate at equal oxygen and acetylene pressures of 5 to 8 lb. per sq. inch.

Ask your LINDE jobber for a demonstration today, or write for more details. LINDE AIR PRODUCTS COMPANY, a Division of Union Carbide and Carbon Corporation, 30 East 42nd Street, New York 17, N. Y.

• PREST-O-WELD Welding Apparatus
Trade-Mark
• see your LINDE jobber

The terms "Linde" and "Prest-O-Weld" are registered trade-marks of Union Carbide and Carbon Corporation.

If you write maker identify as IEN - 4946

SIMPLIFY tough PULLING jobs

Pull Rod or Screw Inserted through UNIQUE "CENTER HOLE"
Ram is drawn in a straight, torque-free pull through Ram. Ram is its own back up! Less rigging time — more effective power!

10 to 100 ton capacities.

*"Center-Hole" in Rams of 30-ton and greater capacities.

Simplex Re-Mo-Trol

HYDRAULIC PULLERS
PUMPS AND REMOTE CONTROLLED RAMS

If it can be pulled, Re-Mo-Trol can pull it—easier and faster! Pulls liners, sleeves, shafts, gears, etc. SAFER remote control. Also lifts or presses. Can save its cost on a single tough job!

WRITE FOR BULLETIN: HYDRAULIC 51

Simplex Jacks

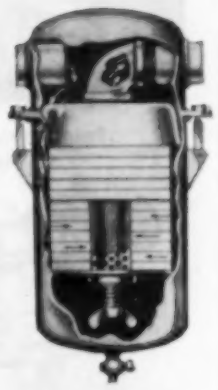
TEMPLETON, KENLY & CO.
2527 Gardner Road • Broadview, Illinois

If you write maker identify as IEN - 4947

STAYNEW

ABSORPTION FILTERS PROVIDE SUPER FILTRATION!

—REMOVE LAST TRACES OF OIL AND MOISTURE FROM COMPRESSED AIR LINES



MODEL AAFH ABSORPTION FILTER

Many manufacturing processes and certain compressed air operated equipment require the removal of condensed oil and water vapors *completely* from the compressed air. In thousands of installations all over the country, Staynew Absorption Filters remove the last traces of oil and moisture and prevent failure of combustion and other pneumatic controls . . . keep maintenance time and cost at a minimum.

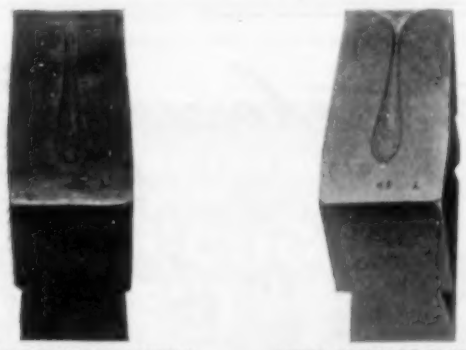
For Complete Information, Write Today For Bulletin B-1A.

Representatives in Principal Cities

DOLLINGER CORPORATION
3 Centre Pk., Rochester 3, N. Y.

ALL TYPES OF FILTERS FOR EVERY INDUSTRIAL NEED

If you write maker identify as IEN - 4948



BEFORE PRESSURE BLASTING — AFTER PRESSURE BLASTING

FINISH DIES and MOLDS . . . Reduce hand Polishing Time!

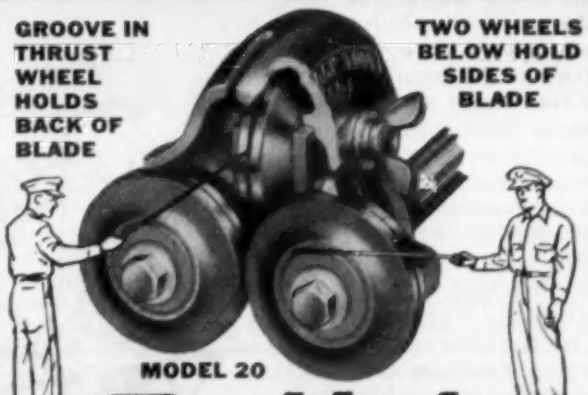
MODEL A . . . ONE OF 4 STANDARD UNITS. CUSTOM MACHINES DESIGNED TO FIT SPECIAL REQUIREMENTS.

ONLY PRESSURE BLAST GIVES YOU 2-SPEED WET-BLASTING

FREE . . . Learn what PRESSURE BLAST can do for you! Die and Mold Polishing, Blending Grind Lines, Deburring, Heat Treat Scale Removal, Honing of Cutting Tools, Pre-plating Cleaning . . . Hundreds of proven, money-saving applications! Write for our new 8 page fully illustrated Booklet . . . or send samples of work you want tested to:

The CRO-PLATE Company Incorporated
747-3 Windsor Street
Hartford 5, Conn.

Sturdy, Strong, Band-Saw Guide



MODEL 20

Paddock BALL-BEARING **BAND SAW GUIDES**

Do you want faster, smoother, safer Band-Saw operation? Install **PADDOCK BALL-BEARING BANDSAW GUIDES.** Model 20 fits all machines having 2½" back of blade to guide post. Works above or below saw table. Interchangeable ball-bearing wheels run with blade to give friction free blade support. Cut-away section in photo shows grooved wheel that supports back of blade. Two side wheels support sides of blade. Designed for ⅛" to 1¼" wide blades. Models for large or small machines. Write for details, give size, and make of machines.

SHIPPED ON APPROVAL WHERE VALUE IS QUESTIONED

PADDOCK TOOL COMPANY
Guide Makers Since 1920
1418 Walnut Street — Kansas City, Missouri

If you write maker identify as IEN - 4950

PYROMETER . . Optical instrument for precise temperature measurements

Source: PYROMETER INSTRUMENT CO. 92 Portland Ave., Dept. IEN, Bergenfield, N. J.

Catalog 95

Temperature, over 1,300 deg. F., can be read accurately by this new Micro-Optical pyrometer. It can be employed on targets as small as 0.001 in. in diameter and, by means of supplementary lenses, can be adjusted for focal distances ranging from 5 in. to infinity. The object is magnified 20 X. The wide scale direct reading meter makes it possible to read the temperature accurately. Mounting can be made on a table top or floor type tripod. Both are equipped with verniers for fine vertical and horizontal adjustment.

If you write maker identify as IEN - 4951

NAME PLATES . . Metal foil, adhesive backed, specified designs

Source: MILLER DIAL & NAME PLATE CO. 4400 N. Temple City Blvd., Dept. IEN, El Monte, Calif.

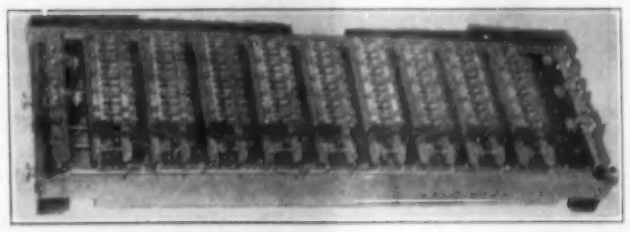
Sample packet upon request

Foilcal trade names a new etched metal and enamel name plate that is applied permanently by means of a pressure sensitive adhesive on the rear face. The plate withstands temperatures in a range between minus 58 and plus 257 deg. F. It also is resistant to abrasion and color fading. It will adhere to any smooth clean surface.

If you write maker identify as IEN - 4952

SWITCH . . Multiple assembly for automatic controls and computers

Source: KELLOGG SWITCHBOARD & SUPPLY CO. 79 W. Monroe St., Dept. IEN, Chicago 3, Ill.

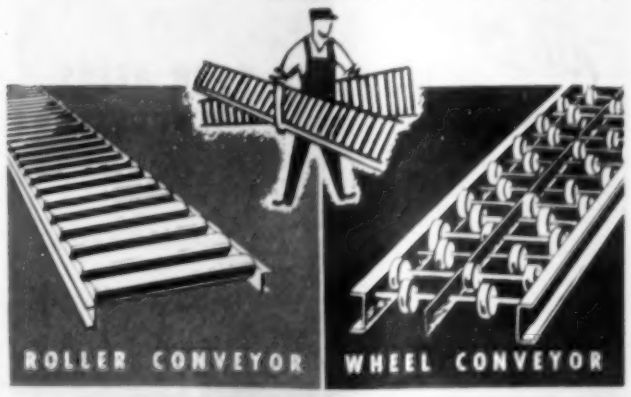


For a specified installation

Crossbar Switch is a new multiple assembly of automatic switching elements. The elements are mounted for drawer like removal from a rack. They employ palladium contact points and can provide any circuit connection in approximately 50 milliseconds by energizing two specific coils. Thus any 3 or 60 circuits can be connected to any other 75, or one circuit can be chosen from a maximum of 936.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4953



"light-as-a-feather"

ALUMINUM conveyors

— have many advantages: *Light weight, easy-to-handle, easy to assemble.* Ideal where portable conveyors are desired.

Aluminum ROLLER Conveyor, available in several roll sizes, in lengths and roll spacing as required. Stock materials and parts permit quick shipment on made-to-order basis.

Aluminum WHEEL Conveyor, carried in stock complete for immediate shipment. In 12" or 18" widths with 10 wheels per foot.

Write for further information.

Logan Conveyors
LOGAN CO., 276 CABEL ST., LOUISVILLE, KY.

If you write maker identify as IEN - 4954

No-Maintenance Controller? Well, almost . . .

● For years at a time, your instrument maintenance men may never even see the inside of your Electromax Temperature Controllers, because these instruments need almost no maintenance. A pair of 7-watt 110-volt light bulbs, a pair of standard radio tubes operating at 10% of rating, and a plug-in, hermetically-sealed relay are the only replaceable parts. There's nothing to lubricate; no cells, ink or chart. Use it to 1000 F; get further information from our nearest office or 4905 Stenton Ave., Phila. 44, Pa.

LEEDS & NORTHRUP
instruments — automatic controls • furnaces

If you write maker identify as IEN - 4955

Anyone can see

Yes, SHAFER Bearing quality is instantly apparent to anyone who has seen the efficient performance of industry's most reliable pillow block for the toughest applications.

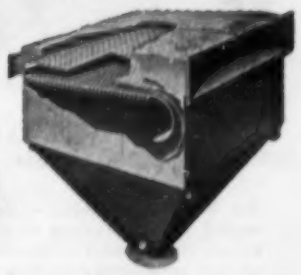
Unique convex design of inner race in effect supports the shaft on a free-rolling ball (instant self-alignment), and that ball rolls naturally on matching concave surfaced rollers (high thrust and radial load capacity).

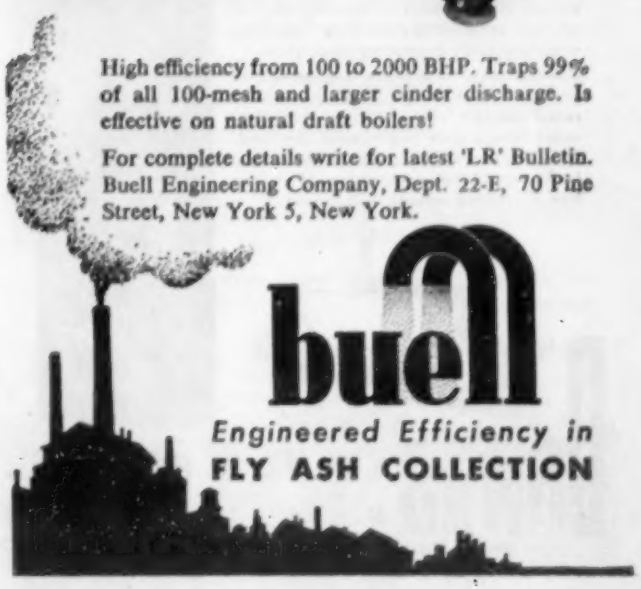
You can see that SHAFER Pillow Blocks hold the answer to your anti-friction bearing problems. Available in wide range of sizes, and housing options. Send today for Engineering Bulletin 51 containing full information. SHAFER Bearing Division, 801 Burlington Ave., Downers Grove, Illinois.

SHAFER BEARING DIVISION
CHAIN BELT COMPANY

If you write maker identify as IEN - 4956

Buell-designed 'LR' Collector Stops Fly Ash From Small Boilers!





High efficiency from 100 to 2000 BHP. Traps 99% of all 100-mesh and larger cinder discharge. Is effective on natural draft boilers!

For complete details write for latest 'LR' Bulletin. Buell Engineering Company, Dept. 22-E, 70 Pine Street, New York 5, New York.

buell
Engineered Efficiency in **FLY ASH COLLECTION**

If you write maker identify as IEN - 4957

One-Man DRUM TRUCK

Makes Loading And Unloading Of Drums Up To 1000 Pounds Automatic

Handling of drums and barrels becomes a cinch for one man with this Thomas Safety Drum Truck. Trucker never touches barrel—loading and unloading is automatic. Sliding 2-in-1 hook fits all wooden and metal barrels, cradles drum securely so it can't roll off. Available with chemical resistant tires. Order one on trial basis.

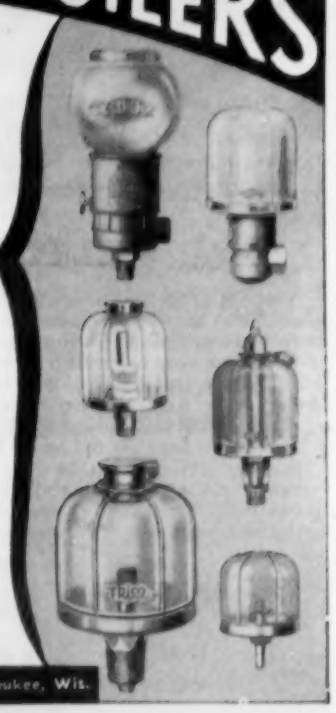
The No. 90 Thomas Drum & Barrel Truck shown above has a capacity of 1000 lbs., weighs 80 lbs.

THOMAS TRUCK & CASTER CO.
446 Mississippi River
Keokuk, Iowa

Send for free literature

If you write maker identify as IEN - 4958

Here's Why It Pays TO EQUIP YOUR MACHINERY & MOTORS WITH TRICO AUTOMATIC OILERS



- Eliminate costly "trust-to-luck" daily hand oiling.
- Increase production time.
- Reduce bearing failures.
- Prevent premature wear and parts replacement.
- Savings of power and oil.
- Lengthen equipment life.
- No dangerous, slippery floors and fire hazards.

WRITE FOR FREE CATALOG

TRICO "KLIPLOK" CLAMPS For Fuse Clips

Save Fuses, Clips And Power. Prevent arcing and unnecessary fuse blows.

WRITE FOR BUL. NO. 6

TRICO FUSE MFG. CO. Milwaukee, Wis.

If you write maker identify as IEN - 4959

PICK 'EM UP Faster..Easier

DOWNS SAFETY GRABS ...GRIP ANYTHING!

Yes we said anything—odd shapes, round, oblong, square or even loose objects such as bags or bundles. Best of all you save money on your handling problems while protecting employees.

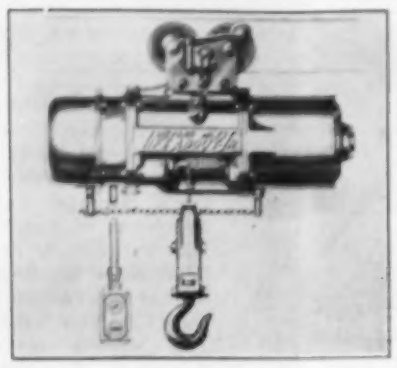
Downs Safety Grabs are engineered to provide a load safety factor greater than rated capacity plus a Bulldog grip that won't let go until you release the load. There's a Downs hook, grip, tong or sling to fit every handling problem. Write for free illustrated catalog 200 today!

DOWNS CRANE & HOIST CO.
MECHANICAL ENGINEERS
540 W. VERNON AVENUE • LOS ANGELES 37, CALIF.

If you write maker identify as IEN - 4960

HOIST . . Drum type electric, ¼ to 1 ton, lift to 16 and 20 feet

Source: SHEPARD NILES CRANE & HOIST CO.
100 Schuyler St., Dept. IEN, Montour Falls, N. Y.



Chain limits lift

Lift About Jr. is a new light duty drum type wire rope hoist designed for intermittent use. It is available with a dc. or an ac. motor in ¼ to 1-ton capacities. Lift speed ranges from 12 to 25 fpm. on dc. assemblies and from 20 to 37 fpm. on ac. drives. Maximum lift is 16 ft. on the hook suspension design, 20 ft. on the other frame types. The hoist can be equipped with a push button or with pull rope actuation.

The control employs two magnetic contacts, one for hoisting and one for lowering. Closing either one releases an electric brake and operates the contacts to close the circuit to the motor for operation in the given direction. Opening the contactor circuit results in opening the motor circuit. Then the brake sets by means of a spring. A mechanical interlock between hoisting and lowering contactors prevents both from being operated at once.

The hoist operates a safety type load block with an enclosed sheave. It is assembled in a weather proof enclosure. Its rotating parts operate in oil and are designed to simplify assembly and dis-assembly so special tools are not required for installation or servicing.

If you write maker identify as IEN - 4961

VALVE . . Bellows operated throttles steam to control temperature

Source: LAWLER AUTOMATIC CONTROLS INC.
453 N. MacQuesten, Dept. IEN, Mount Vernon, N. Y.

Fail safe design

Bronze is employed in the body, union ends and bellows bracket in this new thermostatically controlled valve. The bellows element is vapor tension type and is supplied with 6 ft. of armored capillary tube, a copper bulb and a tank bushing. The valve is available in ½ to 2-in. pipe sizes for 12 ranges. These are minimum at 50 to 80 deg. F. and maximum at 225 to 255 deg. F.

The design is for 150-lb. steam pressure on the semi-balanced double seated unit. It is 125 lb. in single seated design in the ½-in. size and 20 lb. in single seated 2-in. size.

A feature in the design is the "fail safe" arrangement by which the valve is positively closed if the bellows element should fail to prevent an over-ride in the controlled temperature. The unit also can be specified in reverse acting fail safe design so it opens in the event of bellows failure.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4962

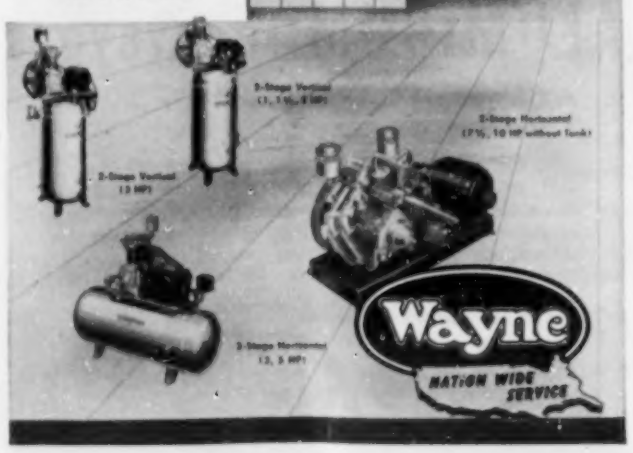
AIR POWER BUILT FOR YOUR NEEDS

WAYNE Job-Engineered COMPRESSORS

NAME YOUR air requirements—we'll apply the Wayne Air Compressor to the job. Your air capacity, air pressure, horsepower and other requirements are related to one of the Wayne complete line of single- and two-stage compressors, high- and low-pressure types, horizontal and vertical models, sizes from fractional to 10 hp.

Wayne gives you pre-tested, guaranteed, full-rated air power—not just a theoretical displacement rating—for each recommended compressor. All this, plus longer-service automotive-type pistons, the Wayne "wear-guard" constant-level lubrication, and extra cooling capacity. Write today for data on "How to Select an Air Compressor."

THE WAYNE PUMP COMPANY
SALISBURY, MARYLAND
TORONTO, CANADA



If you write maker identify as IEN - 4963

SMALL INSTRUMENT PARTS ARE MADE BEST ON LEVIN LATHES

Twenty-three models for all types of work. 4" swing. Bed Length 12" or 18"; over 100 stock sizes of collets from .004" to 5/16".

Send for Catalog L describing Lathes for tool work, second operations; turrets and full line of accessories.

LOUIS LEVIN & SON, INC., 3610 S. Broadway, Los Angeles 7, Calif.

If you write maker identify as IEN - 4964

Stonehouse SIGNS FOR INDUSTRIAL ACCIDENT PREVENTION

Safety on the March

Whatever your hazard, warning or guidance there's a Stonehouse sign to meet them. Shown in full color in our complete 64-page Catalog. It's sent free on request.

Stonehouse SIGNS, Inc. MANUFACTURERS • Stonehouse Bldg., 9th at Larimer
Denver 4, Colorado

ACCIDENT PREVENTION • steel SIGNS IN STANDARD COLORS AND DESIGNS

If you write maker identify as IEN - 4965

A PAID NEWS ADVERTISEMENT BY KANO LABORATORIES

You don't have to be a Monkey—

. . . to loosen frozen bolts on utility poles. The new Aerosol Kroil, which can be squirted with one finger, loosens the most stubborn frozen metal parts . . . FAST. More than 12,000 shops depend on Kroil whenever frozen metal parts threaten to tie up production or waste manhours. In this new package it is the finest rust-busting tool ever . . . shoots a stream 3 ft. yet won't leak. One customer said, "before trying Kroil we broke off every nut (on our heat treat trolleys), since then we have not lost one and have decreased the repairing time from 30 minutes to about 6 minutes per trolley."

KANO KROIL LOOSENS FROZEN METAL PARTS

Use Kroil on all dismantling jobs; for filing, sawing, honing; . . . also keeps air driven tools running freely.

Just try Kroil on a make good basis. Case of 12 Aerosol Kroil 12 ounce cans $21.60 f.o.b. factory or send $2.35 for one can postpaid. If it doesn't perform to suit you, return the empty can for refund.

KANO LABORATORIES 1071 THOMPSON LANE NASHVILLE 11, TENNESSEE

If you write maker identify as IEN - 4966

A-F LIVE RAIL

Wheel Conveyors can also do many other "exclusive tricks" . . . their unique design — available in 5 ft. and 10 ft. lengths, sections or "singles" — permit easy spacing in any needed width and wheel pattern — and dis-assembly and set up to meet new problems. Low in cost, light in weight . . . never obsolete. Write, without obligation for catalog today!

Design and Mechanical Patents Pending

LIVE RAIL

NEW CONCEPT IN WHEEL CONVEYING

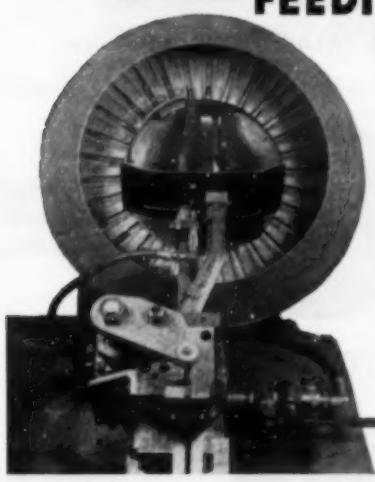
Pre-Engineered Products Division

ALVEY-FERGUSON . . OF CINCINNATI

346 Disney Street Cincinnati 9, Ohio
West Coast P. O. Box 244 AZUSA, CAL.

If you write maker identify as IEN - 4967

Use DPS SELECTIVE FEEDING DEVICES



● Note the improvement in Lower Costs, Speedy Production, Quality Control and Increased Profits . . . Now this DPS contribution to the metal-working industry is emphasized in an expanded line of selective feeding devices and engineering service . . . Tell us your requirements; we have the unit and the know-how to meet your needs.

DPS BARREL-FEEDER

● Above is an interesting case showing separate screws and lock washers that were loaded into a single feeder and ejected loosely assembled at the rate of 60 to 70 a minute . . . An amazing speed increase over slow, manual operation. In this instance, as in thousands of other applications, the unit was designed with the idea of maximum feeding of a wide variety of parts at a fraction of the cost of manual feeding.

DPS BOWL-FEEDER

Our Newest Addition

● An electric, vibrating unit that advances the parts on a circular spiral, aligning and correctly locating them to issue directly into the work area in proper time cycle. Provides fully automatic feeding of light, fragile parts that normally could not withstand tumbling.

Let us diagnose your symptoms and prescribe the proper remedy. Write for details.

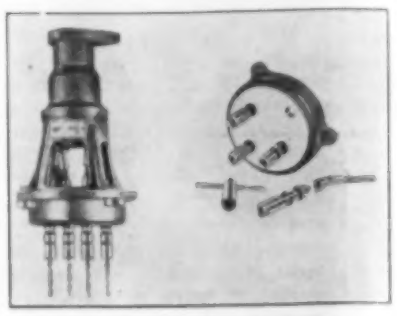
DETROIT POWER SCREWDRIVER CO.

2815 W. FORT ST. DETROIT 16, MICH.

If you write maker identify as IEN - 4969

DRILLING . . Multi-spindle head with fixed position locating plate

Source: COMMANDER MFG. CO.
4225 W. Kinzie St., Dept. IEN, Chicago 24, Ill.



Centers ½ to 9 inches

Illustrated is new design of the company's Multi-Drill multiple spindle adjustable drill head. The spindle positioning arms have been replaced by a plate carrying openings for the spindles at predetermined fixed positions. From 2 to 8 spindles can be installed in the new plate which bolts in place on the bottom face of the drill head.

A plate assembly can be set up for a job with the spindles and drills correctly located. Then it can be carried in the tool crib, for use when it is required, with various other assemblies with fixed position spindles.

If you write maker identify as IEN - 4970

CONDUCTOR . . Steel wire is copper plated to 5 and 10 per cent

Source: NATIONAL-STANDARD COMPANY
Dept. IEN, Niles, Mich.

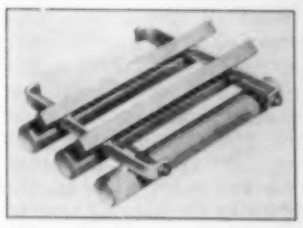
Technical data upon request

Hard drawn or annealed steel wire, bare or tinned, in 5 to 36 B & S gage, is copper plated with coatings of 5 and 10 per cent by weight in this new electric conductor. Copperply is the trade name. The wire is suited for redrawing, stranding, weaving, braiding, insulating and flattening. It applies in electrical and other applications where strength, resistance to fatigue and bending are important factors. Coatings, less than 5 per cent and greater than 10 per cent, can be produced for special requirements.

If you write maker identify as IEN - 4971

SEPARATING . . Magnetic grate for feed hopper on a molding machine

Source: ERIEZ MFG. CO.
Grove Drive, Dept. IEN, Erie, Pa.



To fit any hopper

Granular plastics flow freely between the stainless steel cylinders that enclose permanent magnets in this new magnetic grate when the unit is positioned in the bottom of a feed hopper on a molding machine. Grid bars, also made of stainless steel, are positioned above the cylinders to deflect the flow for intimate contact so ferrous particles will be separated out from the plastic material and will be retained on the cylinder surfaces. The unit is removed from the hopper from time to time and cleaned. Life of the permanent magnetic elements is unlimited.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4972

MHS TOW-LINE CONVEYOR

SIMPLIFIES
COORDINATES
REGULATES
EXPEDITES

It's so easy for a rush of work to throw a shop, an order department, shipping facilities or warehouse into confusion. Then production suffers, deliveries are late and costs zoom.

One dependable remedy is the time-tested MHS Tow-Line Conveyor that keeps operations moving along at a steady, orderly pace—keeps human mistakes at a minimum.

The tow-chain can be entirely below floor level—no obstructions on the floor whatever. Or the chain can be overhead if that's desirable. In either case, dolly trucks can be hooked on or released anywhere, at any time.

No limitations on the length of the system or on the number of turns.

Same system may be all on one floor or it may serve two floors—entirely flexible.

Send for Bulletin TC-1 and look over the specific details as applied to your operation.

MECHANICAL HANDLING SYSTEMS INC. AND SUBSIDIARIES

4605 NANCY AVE., DETROIT 12, MICH.

Offices in Principal Cities

FACTORIES: Detroit, Mich. • Fairfield, Iowa • Albany, N.Y. • Windsor, Ont.

If you write maker identify as IEN - 4973

"It all started the day we installed that Alvey-Ferguson Conveying Equipment."

For Engineered Conveying Systems

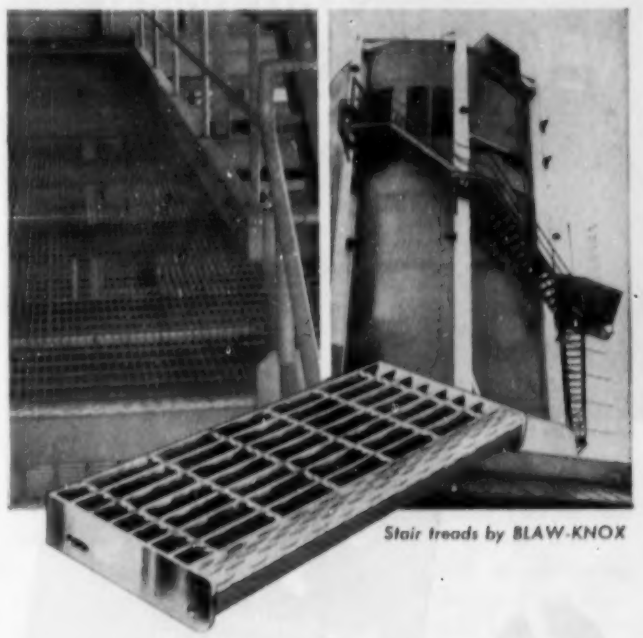
THE ALVEY-FERGUSON COMPANY

Since 1901

341 Disney Street CINCINNATI 9, OHIO

Representatives in Principal Cities

If you write maker identify as IEN - 4974



Stair treads by BLAW-KNOX

you can easily make

every step a safe step

Indoor or outdoor, you can rely on Blaw-Knox Stair Treads to provide the safety you want in your plant.

Designed for tremendous strength against impact, these stair treads are made with twisted cross bars and rolled diamond checkered plate nosing—as illustrated.

But, when desired, you can get treads with a twisted cross bar nosing or an abrasive nosing. And for specially slippery conditions we can supply you with serrated cross bar treads.

Just tell us what your application is and we'll offer our recommendations as to the best type of tread for your job.

Only Blaw-Knox Electroforged® Steel Grating and Stair Treads —have these five exclusive features:

1. rigid one-piece construction —easy to install
2. all surfaces accessible— easy to paint
3. no sharp corners to clog— self-cleaning
4. maximum open area—for light and ventilation
5. non-slip twisted crossbar— safe footing

A short note will bring you a copy of new Bulletin No. 2365-R—a dimensional sketch will bring you a quotation

BLAW-KNOX

BLAW-KNOX COMPANY

2050 Farmers Bank Bldg., Pittsburgh 22, Pa.

BLAW-KNOX EQUIPMENT DIVISION
GRATING DEPARTMENT

GRATING APPLICATIONS: floors • platforms • walkways • catwalks • stair treads • fan guards • shelving • and many other uses, both outdoors and indoors, for versatile steel grating.

If you write maker identify as **IEN - 4976**

Stop torsional strain with Eastman ADAPTER UNIONS

Eastman Design and Engineering Guarantees Tight Fit . . . Easy Action

- **Eastman Adapter Unions** prevent twisting and assure proper positioning of hose lines when being installed. Accurate machining assures leakproof metal-to-metal seat as effective as a ground joint union.
- **Eastman Angled Adapter Unions** eliminate the use of elbows and pipe unions, thereby reducing the number of threaded connections. Original Eastman design provides tight-fitting joint at any pressure.
- **Eastman, "First in the Field of Hydraulic Hose Assemblies,"** stands for the highest quality of material and workmanship—your best assurance of satisfactory service.

"Safeguarding Industry's Lifelines of Mobile Power"

EASTMAN MANUFACTURING CO.
Since 1914
Dept. IEN-5, Manitowoc, Wisconsin

Straight and Angled Adapter Unions

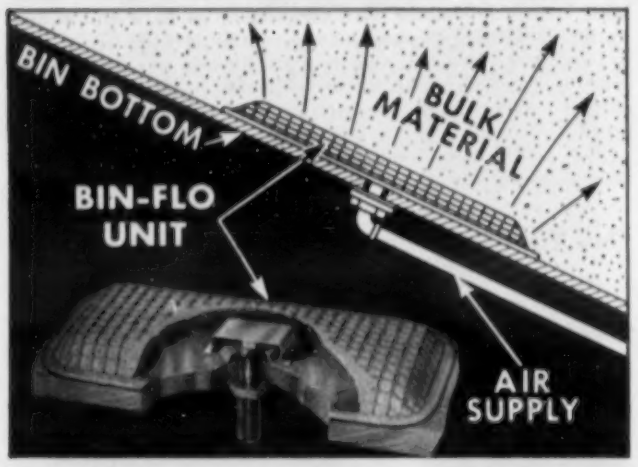
Eastman *first in the field*
HYDRAULIC HOSE ASSEMBLIES

Send for Eastman Form No. 231-B, 232-B for sizes, angles available.

If you write maker identify as **IEN - 4977**

THE JOHNSON CORP., 846 Wood St., THREE RIVERS, MICH.

If you write maker identify as **IEN - 4978**



BIN-FLO

USES SMALL VOLUME OF AIR AT LOW PRESSURE

KEEPS BULK MATERIALS MOVING

BIN-FLO units in bins, chutes, hoppers, etc., restore flow characteristics to dry, finely ground materials which tend to pack or bridge in storage. Types for all materials and conditions. No moving parts; simple installation; negligible operating cost; no maintenance cost.

BIN-DICATOR bin level indicator—"The Eyes of the Bin"—automatically reports levels of materials in storage; automatically controls filling machines; prevents waste.

NEW 20-PAGE BOOK FREE

THE BIN-DICATOR CO.
13946-B Kercheval • Detroit 15, Mich.

If you write maker identify as **IEN - 4979**

WINDING . . Tension device for insulated wire removal from a reel

Source: ASSOCIATED PRODUCTION CO.
162 N. Clinton St., Dept. IEN, Chicago 6, Ill.

Mounts on floor

Wire, in gages from No. 36 to No. 15, insulated with enamel, Formex, cotton, silk, is removed from a 12-in. reel and directed to any type of equipment or winding machine by this new No. D-54 De-Reeler. The device consists of a base and over-arm with a sheave to direct the wire to the equipment being served. It mounts a reel of wire in stationary position and above it a rotating flier with a pulley on a spring tension adjustable with a nut. Construction is in steel and bronze. Finish is black enamel and cadmium plating. Overall dimensions are 17 by 13 by 25 inches. Weight is 23 pounds.

If you write maker identify as **IEN - 4980**

SOLDERING . . Liquid flux provides fast non-corrosive action

Source: FARRELLOY COMPANY
1249 N. 26th St., Dept. IEN, Philadelphia 21, Pa.

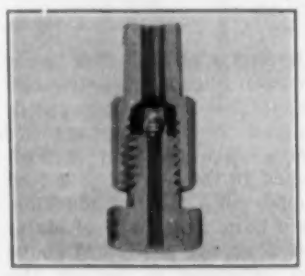
$4.75 per gallon

Rosin and alcohol are combined in this new No. 8 non-corrosive soldering flux. The mixture is fortified to suspend surface oxides on the common metals rapidly and thoroughly without charring or building excess residue. The action is sufficiently rapid to solder on clean steel without pre-tinning. The material is suited for use on brass, copper, tinplate.

If you write maker identify as **IEN - 4981**

VALVE . . Manual bleeder unit for use on cylinders, radiators, tanks

Source: A. W. CASH COMPANY
Box 551, Dept. IEN, Decatur, Ill.



Self cleaning

Standard size is ⅛-in. pipe connection for this new Cashco manual bleeder valve. It applies on cylinders, radiators, tanks, diaphragm spring chambers, differential valves, pilot lines, to release unwanted fluids and gases. It is opened by turning the knurled head to retract the valve stem from its seat. No special tools are required for installation or operation. Standard construction is in brass or stainless steel. Other materials can be specified to meet requirements.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 4982**

FRICK

Air Conditioners Will Help You Add-Up More Profits

By making your staff more alert, and more loyal. You will attract more customers and more trade.

Frick air conditioning, whether as a packaged unit or a central system, will bring you these and other advantages. Our engineers are unbiased in recommending the equipment you need: we make both units and custom-built systems.

Get an estimate from your nearest Frick man, or write for Bulletin 522. Be ready to add to your profits when warm weather hits!

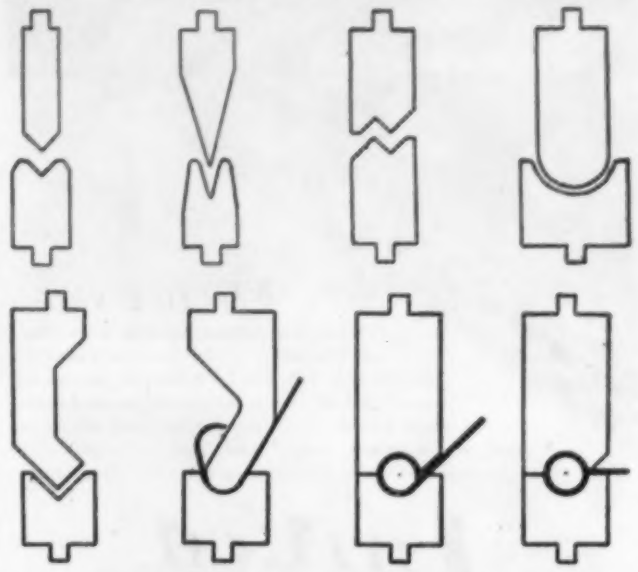
FRICK CO.
WAYNESBORO, PENNA.

If you write maker identify as **IEN - 4983**

PRESS BRAKE FORMING DIES

PROMPT DELIVERY

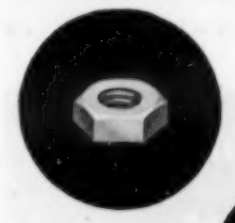
Any Metal—any gage—to fit any make of machine



Bulletin, "Rafter Forming Dies," shows and specifies complete line

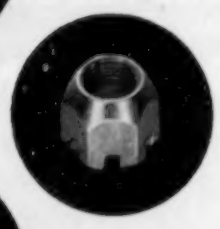
RAFTER MACHINE COMPANY, INC.
SINCE 1917
249 Stephens Street **Belleville 9, N. J.**
COLD ROLL FORMING MACHINES AND GANG SLITTERS

If you write maker identify as **IEN - 4984**

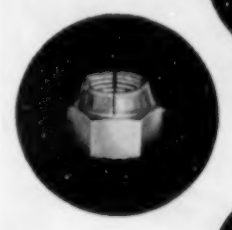


FINISHED & HEAVY HEXAGON NUTS

SPECIAL

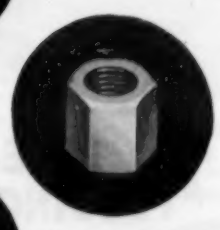


HEXAGON NUTS TO YOUR SPECIFICATIONS



"HUGLOCK"—SELF-LOCKING ONE-PIECE ALL-METAL

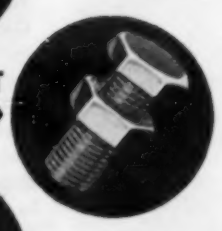
"SEEZ-PRUF"



NON-SEEZING STEEL NUTS FOR HIGH TEMPERATURES

"MARSDEN"—THE FREE RUNNING LOCKNUT

VALVE-TAPPET ADJUSTING SCREWS



FOR INTERNAL COMBUSTION ENGINES

"PLACE" BOLTS—ONE-PIECE SELF-LOCKING WITH DIAPHRAGM HEAD

OIL & WATER SEALERS

OIL AND WATER SEALING COMPOUNDS

Here is the Table of Contents that you will find on the Preface Page of our new 160 page catalog that is about to go to press . . . Besides having complete information and specifications, it contains much engineering data . . . If you have immediate need for such information we have a limited quantity of the current edition that can be supplied upon request without delay.

NATIONAL MACHINE PRODUCTS COMPANY

Manufacturers of Standard and Special Hexagon Nuts, "Huglock" and "Marsden" Locknuts.

44239 Utica Rd., UTICA, Michigan

If you write maker identify as IEN - 4986

The simpler way to save on fastenings to metal and plastics

P-K

TRADE MARK REG. U.S. PAT. OFF.

Hardened Self-tapping Screws

Hex Head Type Z

Industry's favorite for fastenings to sheet metals, structural steel, non-ferrous castings, plastics, plywood, asbestos, hard compositions.

FASTER—no tapping. Simpler, faster than machine screws, bolts, or rivets. Driven with six-point socket wrench, hand or power.

STRONGER—no loose fits, mistapping, or cross-threading. Lasting tightness under vibration proved in millions of applications.

LOWER COST—saves tapping time and tool expense. Permits use of faster power drivers.

IF IT'S P-K... IT'S O.K. For guaranteed quality, get the *Original*. Samples free. Ask your P-K Distributor or write for information to: Parker-Kalon Division, General American Transportation Corporation, 200 Varick St., New York 14.

PARKER-KALON®

The Original **SELF-TAPPING SCREWS**

If you write maker identify as IEN - 4987

FAR-INFRARED HEAT

that's easily controlled, infinitely variable!

CHROMALOX *Electric* **RADIANT HEATERS**

Your Low-Cost Answer to Production Line Heat!

Production line heating tunnels and banks can be easily made right on the job with versatile Chromalox Electric Heaters for drying, baking, dehydrating, curing and other applications. Quickly and easily installed units allow you to "dial" the exact temperatures you require every time—all the time! All-metal construction insures against damage from shock, hard knocks, water, etc., and eliminates contamination hazards.

10-33

WRITE FOR BULLETIN CS-604

It gives details on Chromalox Electric Radiant Heaters and shows how they reduce costs and increase production in your plant.

Industrial Div., EDWIN L. WIEGAND CO., 7505 Thomas Blvd., Pittsburgh 8, Pa.

See Chromalox Electric Heaters Advertisement, Page 5

CHROMALOX

ELECTRIC HEAT FOR MODERN INDUSTRY

If you write maker identify as IEN - 4988

The BIG Tool and Job Capacity

18" CLAUSING DRILL PRESS with *power feed*

★ Drills 1" cast iron, ¾" steel ★ No. 3 Morse Taper, 6½" spindle travel ★ HEAVY-DUTY GEAR-DRIVEN POWER FEED TO TAKE FULL ADVANTAGE OF THIS BIG TOOL AND JOB CAPACITY.

An 18" heavy-duty drill press, with larger tool and job capacity, PLUS a heavy-duty GEAR-DRIVEN power feed to make effective use of its capacity. The power feed, with its large heavy-duty gears, is positive and sure — NO belt slippage to reduce power. Feed selection is instant — BY DIAL — no belts to change. Add the Clausing features of new spindle bearing engineering, vernier depth stop, and exclusive head and table positioning mechanism — and you know this is a tool that can save you plenty on both set-up and operating time. Get all the facts before you buy any drill. See your ATLAS CLAUSING Dealer!

WRITE FOR LITERATURE —TODAY!

Atlas CLAUSING

CLAUSING DIVISION—ATLAS PRESS COMPANY
5-105 N. PITCHER ST. • KALAMAZOO, MICHIGAN

If you write maker identify as IEN - 4989

CIRCUIT BREAKER .. Trip free, two pole design, 10 to 50 amp. ratings

Source: I-T-E CIRCUIT BREAKER CO.
1924 Hamilton St., Dept. IEN, Philadelphia 30, Pa.

Solderless terminals

Thermal and magnetic tripping are combined in this new two-pole Type EQ circuit breaker. A common trip bar is an integral part of the mechanism to eliminate the handle tie bar previously employed to join two single-pole breakers together. The trip action guards against small overloads and provides instantaneous magnetic trip on short circuit.

Construction includes arc chutes, silver alloy contacts, quick make, quick-break, trip free mechanism, factory calibration at 25 deg. C. and factory sealing to prevent tampering. Ratings are 10 to 50 amp. on 110/220-volt ac. Interrupting capacity is 5,000 amperes.

If you write maker identify as IEN - 4990

CLEANING .. Free flowing powder for solution in spray washing machines

Source: OAKITE PRODUCTS INC.
116-A Rector St., Dept. IEN, New York 6, N. Y.

Technical data upon request

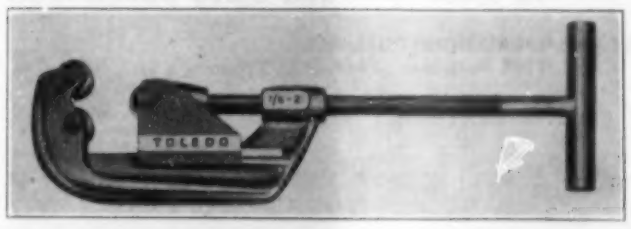
Composition 161 is a new white powdered material soluble in water, free rinsing and inhibited to suit it for use on aluminum. The material is inherently anti-foaming and is particularly suited for the new high pressure spray washing machines to clean aluminum, steel and other metals.

Application is in concentration of ½ to 2 oz. per gal. with operating temperature ranging from 160 to 185 deg. F. The powder is added to warm water and then is heated.

If you write maker identify as IEN - 4991

CUTTING .. Wheel and roller tool adjusts to hand cut 1/8 to 2-in. pipe

Source: TOLEDO PIPE THREADING MACHINE CO.
1445 Summit St., Dept. IEN, Toledo 4, Ohio



Stocked by your supply dealer

A clean, smooth cut-off can be made with this new pipe tool. It hooks on a pipe without difficulty, tracks correctly, will not warp when strain is put upon it by tightening down the wheel backing screw. The cutter wheel is made of alloy steel. Rollers in the hook provide a square base when starting the tool into a cut.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER .. Descriptions .. Ratings .. See Page 50

If you write maker identify as IEN - 4992

CUSTOM MADE PRECISION

STAMPINGS IN SMALL LOTS

Since 1921 we have specialized in the production of accurate die-cut metal stampings in small lots. The tool cost is low . . . actually as low as 15% to 20% of the cost of permanent tools. We guarantee dependable service and delivery on date specified.

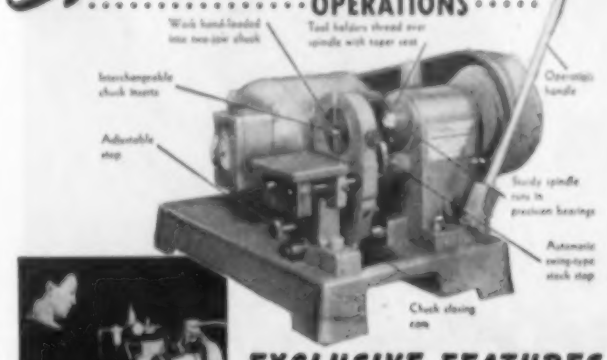
• **SEND** us a sample or blueprint. We'll quote you a price. Or write for detailed information.

DAYTON ROGERS *Manufacturing Company*

Minneapolis 7D, Minnesota

If you write maker identify as IEN - 4993

Speeds **CHAMFERING, POINTING, FACING, REAMING OPERATIONS**



EXCLUSIVE FEATURES

OF PINES END-FINISHER SAVES TIME ON TUBE, PIPE, BAR JOBS

At Voss Products Co., Pines Air-Operated End-Finishing Machine speeds production on screw driver bit chamfering operations from 800 to 1500 pieces per hour over old alcoholic ball methods.

Pines Portable End-Finisher is especially designed for fast, accurate work. Small and compact, its exclusive operating features save time. Forward travel of operating lever clamps and feeds work to rotating cutters in one pass. Operator always has one hand free for stock handling. Equipped with quick, interchangeable tool holders, chuck inserts, 8-speed sheave (760 to 3920 rpm), sturdy spindle, grease-sealed precision bearings. Unit illustrated handles stock diameters up to 2". Maximum feed stroke is 1¼". Automatic air-operated units for higher production work and larger sizes up to 9" capacity are also available.

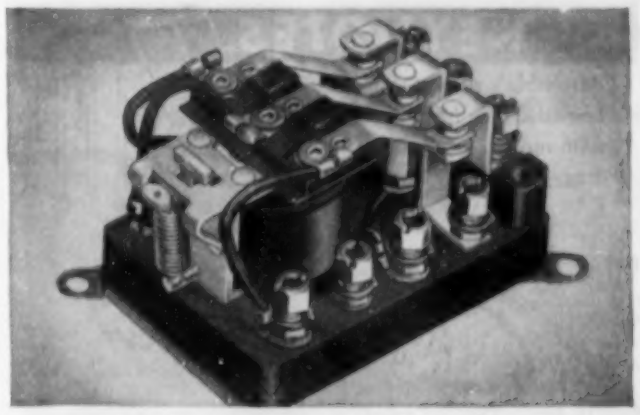
Write for Free Bulletin

▲Write today for more facts. Learn how these machines are built to save time on a wide range of work.

PINES ENGINEERING CO., INC. *Specialists in Tube Fabricating Machinery*

630 WALNUT • AURORA, ILLINOIS

If you write maker identify as IEN - 4994



Need a relay for AUTOMATION controls?

Whether it's for automation, traffic, elevator or instrument control, Ward Leonard's Bulletin 110 relays provide the millions of trouble-free operations required.

Our mechanical design, quality-controlled manufacturing methods and materials, and ample safety factors (both electrical and mechanical) insure this exceptionally long life.

Write today for Relay Bulletin 110. Ward Leonard Electric Co., 33 South St., Mount Vernon, N.Y.

4.11

WARD LEONARD ELECTRIC CO.

Result-Engineered Controls Since 1892

RHEOSTATS • RESISTORS • MOTOR CONTROLS • CHROMASTER

If you write maker identify as IEN - 4995

NEW STANLEY UNISHEAR

No. U3610

WITH 4 SPECIAL FEATURES

1. Adjustable stroke: Makes machine adaptable for both heavy work and light, delicate work.

2. Special blade designs: Allow cutting small radii—½" in 10 gauge—thicker sheets of non-ferrous metals—intricate designs such as stencils.

3. Treadle-actuated lower blade: Allows cutting holes inside a sheet from any desired point—without previous "starting holes"—without cutting in from edge of sheet.

4. Upper blade action: Provides self-feeding—work doesn't have to be pushed—operator always has perfect control to stop cut at any time.

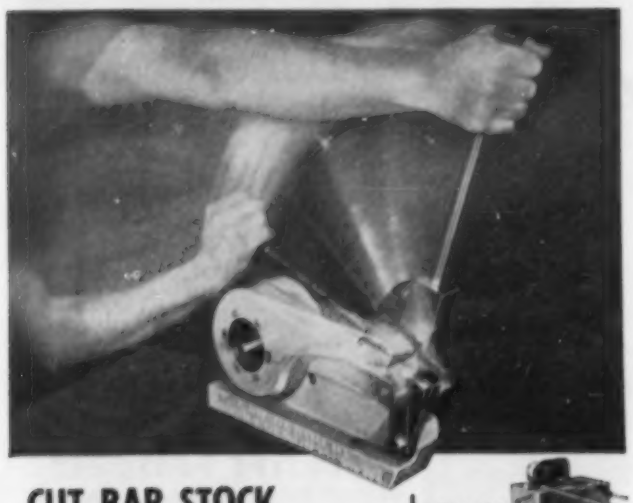
Cuts up to 15 ft. per minute in 10 gauge, hot-rolled steel. Stanley makes a complete line of Unishears, portable and stationary, for cutting hot-rolled steel from 6 gauge to 18 gauge. For full particulars, write Stanley Electric Tools, 414 Myrtle Street, New Britain, Connecticut.

STANLEY *Electric Tools*

A Division of The Stanley Works

HARDWARE • TOOLS • STEEL STRAPPING • STEEL

If you write maker identify as IEN - 4996



CUT BAR STOCK up to 5/8" Diameter

Accurately, Instantly, Easily with **DI-ACRO* ROD PARTER**

The DI-ACRO Rod Parter with its shearing-breaking action allows most bar stock to be cut without burr and distortion. Cutting heads accommodate eleven different round stock sizes. Also special heads for cutting square, and other shaped bars.

DI-ACRO POWER ROD PARTER

Instantaneous cutting action. Motor driven flywheel, other moving parts housed in welded steel cabinet.

*pronounced Die-ack-ro

WANT MORE INFORMATION? *Send for 32-Page Catalog*

di-acro PRECISION METALWORKING MACHINES

O'NEIL-IRWIN MANUFACTURING CO.
318 8th Avenue, Lake City, Minnesota

If you write maker identify as IEN - 4997

2651 McCasland Ave. • East St. Louis, Ill.

If you write maker identify as IEN - 4998

this book shows you how to

Reduce machine noise and vibration 60-85%.

Avoid floor drilling by mounting machines the modern way, without bolts or lag screws.

Reduce maintenance costs by eliminating transmitted vibration which damages machines, floors and buildings.

Save time and money when installing new machinery or repositioning present machinery.

Write today for your free copy of "Why It Pays To Anchor Your Machines With UNISORB."

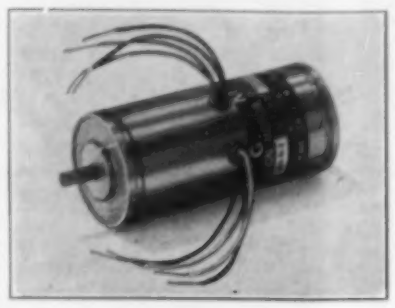
THE FELTERS COMPANY
208 South Street, Boston 11, Massachusetts

UNISORB® MOUNTINGS are used with our special adhesive. UNISORB is also available precoated with adhesive, for use with machines that do not require shimming.

If you write maker identify as IEN - 4999

CONTROL . . Tachometer generator is assembled with a servo motor

Source: G-M LABORATORIES INC.
4300 N. Knox Ave., Dept. IEN, Chicago 41, Ill.



Catalog 4

Both stators of this new motor generator unit are embedded in an insulating compound of high dielectric strength and temperature stability that is maintained at both high ambient temperature and high altitude. The assembly weighs 4 ounces. It measures a bit under 1 in. in diameter and is about 2¼ in. in length excluding the shaft projection.

The motor is a two-phase unit with 26-volt input per phase at 400 cycles and power input at 3¾ watt per phase. Stall torque is 0.35 oz. in. No load speed is 6,500 rpm. The 6-pole, 400-cycle generator rates 0.32 volt output per 1,000 rpm. Maximum null rating is 0.023 volts.

If you write maker identify as IEN - 5000

PLASTIC . . Phenolic material for general use, cures quickly in mold

Source: BAKELITE COMPANY
30 E. 42nd St., Dept. IEN, New York 17, N. Y.

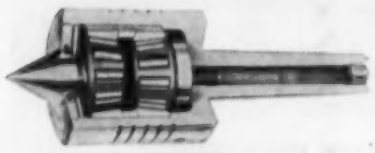
Technical data upon request

BMG-5000 is a new general purpose phenolic plastic molding material for use in any type of molding equipment. It features relatively fast curing in the mold as compared with similar previous materials manufactured by the company. Thus a 6-oz. part for a camera is cured in 28 per cent less time than the previous material. A washing machine roller, ⅝ in. in thickness, saved 22 per cent of the previous required curing time. There is no sacrifice in physical, chemical and electrical properties compared with the company's similar previous materials.

If you write maker identify as IEN - 5001

CENTER . . Roller bearing design, to 2,000 rpm. and 5,200 pound load

Source: IDEAL INDUSTRIES INC.
1108 Park Ave., Dept. IEN, Sycamore, Ill.



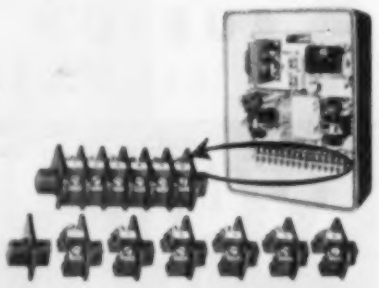
Accurate to 0.0001 inch

Universal is a new live center employing precision roller bearings that are pre-loaded after the center is assembled. The point is then ground on its own bearings. Construction includes a double seal and a stationary Hycar sealing ring in an anodized aluminum cap to keep dirt and chips out. A slinger rotates with the point to retain grease in the bearing. The housing and working parts are hardened and ground. Four sizes are fitted with Morse taper shanks No. 2 to No. 5.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5002

Make Your own Terminal Strips with these Handy Bulletin 892 Terminal Blocks



Bulletin 892 terminal blocks interlock in perfect alignment to provide the exact number of terminals for any panel board. There are no excess terminals — hence, no waste of panel space. The required terminal strip can be assembled quickly and mounted on the panel with hold-down bolts. Plastic barriers separate the clamp-type terminals. All terminals have wire clamps. Write for full details.

Allen-Bradley Co.
1312 S. Second St.
Milwaukee 4, Wis.

ALLEN-BRADLEY
QUALITY MOTOR CONTROL

If you write maker identify as IEN - 5003

Need Rails—Switches—Frogs—Guard Rails or Track Tools? For best selections and prompt deliveries—try FOSTER—shipments of most items can be made from stocks in our five nationwide warehouses.

RAILS—New and Relaying Foster stocks are being replenished daily. Any items we did not have last week, we'll probably have next week. We match specifications and sizes to meet all your requirements on any job, new installations or replacements. *Call on Foster for all your needs for Industrial Track Equipment and Supplies.*

Write for Track Equipment Bulletin IE-5.

L. B. FOSTER CO.
CHICAGO 4, ILL. HOUSTON 2, TEX.
PITTSBURGH 30, PA. NEW YORK 7, N. Y.

If you write maker identify as IEN - 5004

Cost of wasted water @ $1.90 per M. cu. feet is $24.14. If the leak is in a hot water faucet then fuel cost for heating this wasted water will be: $38.91 if coal (9,879 lbs.)†; $91.08 if oil (792 gals.)†; $84.41 if gas (84,411 cu. ft.)†. These figures authenticated Hackensack Water Co.* and American Gas Association†.*

you can stop this needless waste now with Pat'd

'SEXAUER' "EASY-TITE" Faucet Washers

THE ONLY WASHERS BUILT LIKE A TIRE WITH FIBERGLAS RE-ENFORCEMENT

Fiberglas, with a melting point 1200° Fahrenheit, is unaffected by destructive heat of modern superheat water systems; has a tensile strength of 460 pounds per square inch; is non-absorbent and resists all chemicals.

'Sexauer' "Easy-Tites" outwear ordinary washers 6 to 1! . . . Now available with a greatly improved special duPont COMPOUND which adds substantially to longer, trouble-free washer service. This COMPOUND keeps washer from going to pieces under extreme hot water, withstands impurities and has superior tensile strength. 'Sexauer' "Easy-Tites" won't spread, split or "mush-out." They outlast all other washers by 6 to 1; save labor on 5 REPEAT REPAIRS, water and fuel and prolong fixture life.

Send for your

Free Catalog!

For water savings, lower maintenance and fuel costs, write for new Edition H. 'Sexauer' "Easy-Tite" washers just one in over 3,000 TRIPLE WEAR plumbing repair parts and tools. It's today's accepted guide for purchasing and maintenance men in thousands of PLANTS, INSTITUTIONS, AND GOVERNMENT AGENCIES that rely on 'Sexauer' repair materials.

'Sexauer' Maintenance Engineer at your service

There's a 'SEXAUER' TECHNICIAN within your quick call who offers a special SURVEY SERVICE that sets up schedule of exact replacement parts for your plumbing regardless of make or age. A postcard will bring him and your NEW catalog promptly.

J. A. SEXAUER MFG. CO., INC., Dept. K-54
2503-05 Third Avenue, New York 51 *as advertised in THE SATURDAY EVENING POST*

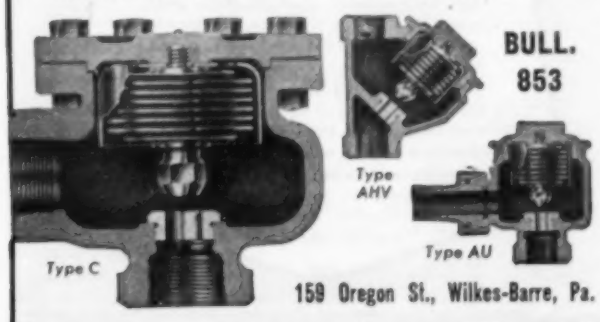
SEXAUER
WORLD'S LEADING SPECIALISTS IN PLUMBING AND HEATING REPAIR PARTS

If you write maker identify as IEN - 5006

Nicholson Steam Traps

CUT THIS HEAT-UP CYCLE 40%

An Eastern processor solved the freeze-up problem on their jacketed kettles by replacing mechanical traps with Nicholson thermostatic units. In addition they found heating time was shortened 40%. Credit is given the higher, more even temperature which Nicholson traps effect. See why leading plants are increasingly standardizing on Nicholsons for faster heat transfer. 5 types: size ¼ to 2"; press. to 250 lbs.



BULL. 853

159 Oregon St., Wilkes-Barre, Pa.

W. H. NICHOLSON & CO.

TRAPS · VALVES · FLOATS

If you write maker identify as IEN - 5007

Do it cleaner... Do it faster!

with ANACONDA'S new

SILVER DUTRAX*

nonmetallic-sheathed cable

Silver Dutrax has a revolutionary new finish. It won't become sticky...won't flake or peel. It's the cleanest, fastest-working cable today. See your Anaconda Sales Office for samples. *Anaconda Wire & Cable Company, 25 Broadway, New York 4, N. Y.*

*Reg. U. S. Pat. Off.

54456

the right cable for the job

ANACONDA®

WIRE AND CABLE

If you write maker identify as IEN - 5008

CREATIVE . . . FUNCTIONAL

Elevated Water Tank

FOR FIRE PROTECTION

This special elevated water tank was installed for fire protection at the Gerber Products Company plant in Rochester, N. Y. It holds 75,000 gallons and provides a gravity water supply that's always ready to flow the instant a sprinkler head opens. This type of fire protection system will often pay for itself in reduced insurance premiums.

Improve your own fire protection system with a gravity water supply. When requesting quotations please state capacity required, height to bottom and location.

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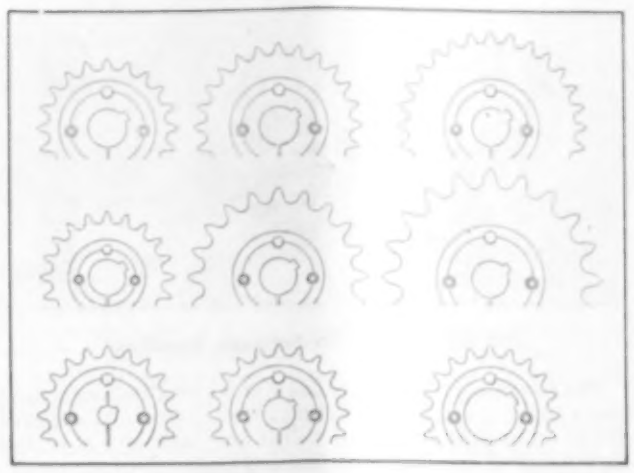
San Francisco • Salt Lake City • Seattle • Tulsa

Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY and GREENVILLE, PA.

If you write maker identify as IEN - 5009

DRIVE . . Roller chain sprockets mount on interchangeable split hubs

Source: DODGE MFG. COMPANY
500 S. William St., Dept. IEN, Mishawaka, Ind.



Bulletin, "Taper-Lock"

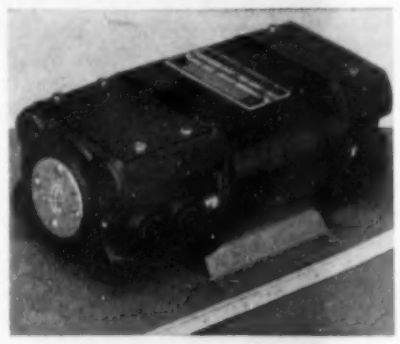
The company announces extension of its "off-the-shelf" line of Taper-Lock sprockets, previously described IEN-3937-53. The extended line includes 1½, 1¾ and 2-in. pitch sizes. The line now includes sprockets and bushings for chain sizes from No. 40 to 160 direct from distributor's stock ready for immediate installation without reboring, keyseating, drilling or threading.

The illustration shows, at the top, three of a range of sprockets that can be used on a given shaft with the same Taper-Lock bushing. The second line shows three sprockets to fit the same shaft in which the sprockets are different sizes and use different bushings but with the same bore. The third line shows how one size of sprocket can be applied to different sizes of shaft by using stock bushings with different bores. All sprockets, in the larger pitches to 26-tooth size, are made of high-carbon steel and can be hardened. Larger sprockets are available in close grained semi-steel.

If you write maker identify as IEN - 5010

GENERATOR . . Motor driven, connects for 6 or 12 volt dc. input

Source: CARTER MOTOR CO.
2644 N. Maplewood Ave., Dept. IEN, Chicago 47, Ill.



Powers mobile radio

Duovolt is new design of the company's Genemotor in which are two separate 6-volt input windings, each with its own field. The unit can be connected in parallel or series, for 6 or 12-volt storage battery operation, to supply correct output for mobile radio equipment. The generator and radio equipment can be transferred from one vehicle to another for either a 6 or 12-volt battery.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5011

SCIENCE MAKES POSSIBLE

FUSED EDGES

U. S. PATS. 2521984, 2521985

Vacuum cleaner air filter and a sweat band, both with sealed edges.

Thermoplastic man-made fibres can be felted and fabricated into special parts for assembly or use without further processing. The felt within the edges can have any desired porosity, within wide limits. Thus these fused-edge felts have great versatility, and are capable of rendering many different services. It will pay you to look into what they can do for you. Write for information on your company letterhead.

SOME PRESENT USES

Vacuum cleaner filters
Powdered soap containers
Face powder pads
Insulation
Clothing lining
Fluid filters

(The field has barely been scratched!)

American Felt Company

TRADE MARK

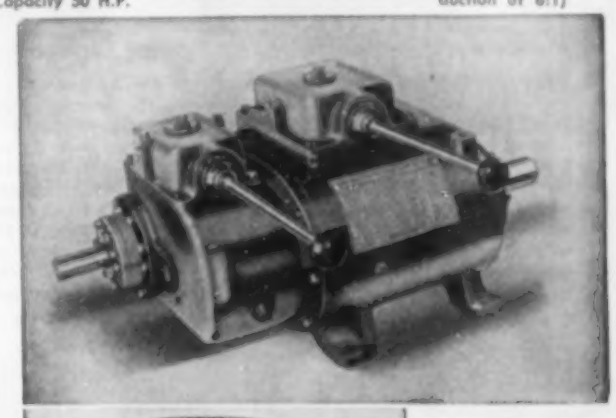
18 GLENVILLE RD. GLENVILLE, CONN.

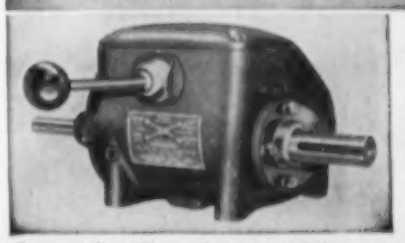
If you write maker identify as IEN - 5012

WESTERN "SUPER" *with* 8 SPEED CHANGES

For use on large lathes, boring mills, chemical and rubber machinery, etc., and used for replacement of gear boxes on large radial drills. Capacity 50 H.P.

In geometric progression of 1.29 (total reduction of 6:1)





(left) "900 B series" has a 5 hp. capacity with input speed of 900 r.p.m. . . . 4 gear changes are available through one-shift-lever automotive type.

Ratios — 1:1, 2:1, 3:1, 4:1.

On special machines where transmissions are required — a standard WESTERN model can often be adapted to give the required spindle speeds . . . and even when modifications are made, a WESTERN for the basis of the design greatly simplifies the problem. Similar transmissions of 10 hp. capacity are available . . . we can supply the necessary V-belts, sheaves, output pulleys, and motors from stock.

up to 100 h. p. For Measuring Lathes, Milling Machines, Shapers, Turret Lathes, Radial Drills, Slotters, Ball Cutters, Gear Cutters, Die Sinkers, Boring Mills, etc.

WESTERN TRANSMISSIONS

WESTERN MANUFACTURING CO. — 4245 SCOTTEN — DETROIT, MICHIGAN

If you write maker identify as IEN - 5013

Only one Yale Gas Truck . . .

but as many handling jobs as your operation requires

Versatile is the word for time-and-money-saving YALE Gas Trucks. Yes, one YALE gas truck . . . with interchangeable attachments . . . can perform a variety of handling jobs daily . . . do it faster—safer—at less cost.

Yale Electric Trucks do everything the Gas Trucks do . . . can be fitted with all YALE attachments . . . are efficient, economical and trouble-free. Capacities to 100,000 lbs. And before you buy *any* electric truck, look into the big news about YALE's new Safety Silhouette Electric Truck—with exclusive safety features you've never seen before!

*Reg. U. S. Pat. Off.

YALE*

INDUSTRIAL TRUCKS AND HOISTS

Write for further information to The Yale & Towne Manufacturing Company, Philadelphia 15, Penna., Dept. 365

Gas, Electric, Diesel & LP-Gas Industrial Trucks
Worksavers • Hand Trucks • Hand & Electric Hoists • Pul-Lifts

If you write maker identify as IEN - 5015

Rolling Steel Doors

Manually, Mechanically, or Power Operated

Below you see Mahon Power Operated Rolling Steel Doors installed in six truck openings to a motor freight loading dock. Another Mahon Power Operated Rolling Steel Door 17'-0" x 22'-0" is installed in a railroad opening in connection with this same loading dock. Rolling Steel Doors occupy no usable space either inside or outside the opening . . . they create no overhead obstructions—cranes may be employed to handle materials adjacent to the door opening. Quick opening, quick closing, vertical roll-up action saves valuable time . . . all-metal construction provides permanence, greater protection against intrusion and fire, and assures you a lifetime of trouble-free service. Write for Catalog containing complete information including Specifications.

THE R. C. MAHON COMPANY
Detroit 34, Michigan • Representatives in All Principal Cities

MAHON

If you write maker identify as IEN - 5016

WEBB *hand pushed* TROLLEYS

Webb Hand Pushed Trolleys are sturdily built for long life and minimum maintenance. Hardened steel wheels equipped with retainer type ball bearings assure long wearing properties and ease of operation. Triple labyrinth seals keep lubricant in and dirt out. Side guide rollers effectively eliminate binding and excessive wear, especially when moving loads around curves. For simple, inexpensive and easy handling of materials, use Webb Hand Pushed Trolleys.

P-2530
4" to 12" I-BEAM; 1 Ton Capacity

For Bulletins and Prices, write to:

JERVIS B. WEBB CO.
Conveyor Engineers and Manufacturers
8915 ALPINE AVE. • DETROIT 4, MICH.
Offices In Principal Cities

If you write maker identify as IEN - 5017

MORE HORSEPOWER ...IN LESS SPACE...

with the NEW STERLING *Motor Line*

NEW NEMA MOUNTING DIMENSIONS

KLOSD DRIP-PROOF CONSTANT NORMAL SPEED MOTORS

PLUS...

THESE 10 STERLING ADVANCED DESIGN FEATURES

- Over 50% less inactive space
- Protected construction
- Greater bearing protection
- Advanced design terminal box
- Heavy duty ball bearings
- Herringbone rotor
- Direct-through ventilation
- Increased efficiency and performance
- Stator windings of advanced design
- Improved insulation

WRITE FOR NEW BULLETIN NO. E-422-A

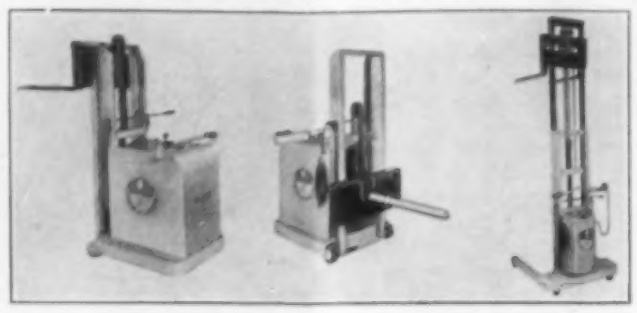
STERLING ELECTRIC MOTORS

New York City 51; Chicago 35; Los Angeles 22; Hamilton, Ont., Canada; Santiago, Chile

If you write maker identify as IEN - 5018

TRUCKS . . Battery powered lift, hand propelled for loads to 1/2 ton

Source: BIG JOE MFG. COMPANY
900 W. Jackson Blvd., Dept. IEN, Chicago 7, Ill.



Ask for Booklet, "In Between Handling"

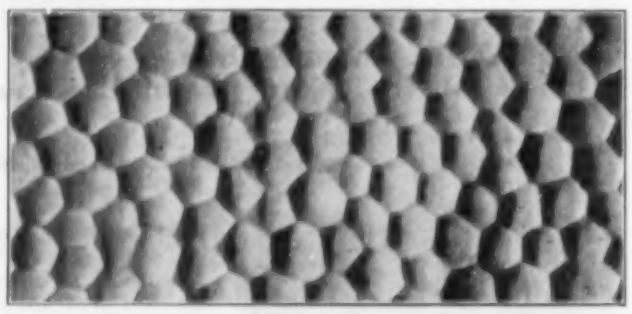
The company announces addition of a new Counterweighter truck and a new telescopic lift unit with a stacking height of 110 in. to its lines of hand propelled and hand or foot or battery powered lift. Extension feet are replaced by a counterweight enclosed in the housing with the battery and motor driven hydraulic pump in the Counterweighter. Six or 12-volt battery operation can be specified. The forks are removable and interchangeable with other types of load carrying attachments such as the ram shown in the center of the illustration.

A feature in the construction lies in the bearings in all three trucks to permit free push or pull movement and unhampered turning. These three new trucks, and others in the company's line with capacities to 2,500 lb., are particularly intended for load handling that is too heavy for manual pick-up and too light or too restricted, with reference to area covered, to justify more expensive trucking equipment.

If you write maker identify as IEN - 5019

METALS . . Design strengthened "hammered metal" Rigid-Tex pattern

Source: RIGIDIZED METALS CORP.
664 Ohio St., Dept. IEN, Buffalo 3, N. Y.



Sample card upon request

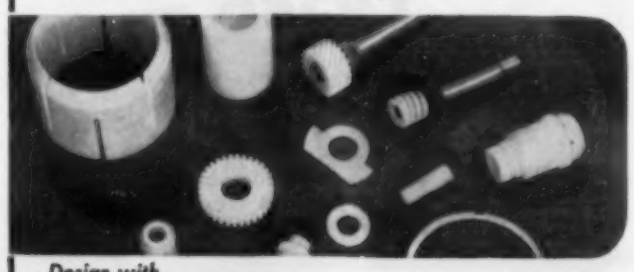
Pattern 1-HM adds a new hand hammered metal effect to the company's lines of design strengthened metal strip and sheet. The new pattern is available in specified metal to 38 in. in width. Maximum depth is 0.025 in. on metals to 0.03 in. in thickness. The sheet or strip is available in mill finish as rolled, in mill finish with high lights, colorized and high lighted, painted or porcelain enameled without high lights.

Application examples are in novelties, hobby and gift items, interior decorating panels, furniture and appliances. The pattern is non-directional and non-geometric and so is easily matched in fabricating operations.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5020

GET NYLON DESIGN ADVANTAGES WITHOUT MOLD COST



Design with POLYPENCO® NYLON / ROD, STRIP, TUBING

Would you like to use nylon's advantages of light weight, mechanical strength and abrasion resistance without costly tooling? Then machining or blanking from POLYPENCO standard shapes provides the answer.

You get design flexibility too because you have no big mold investment. Design changes can be made quickly without the delay or expense of a new mold.

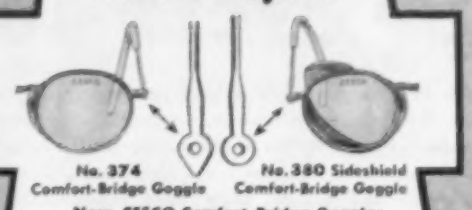
Other Polypenco Nylon Advantages
TECHNICAL HELP—in application of material and method of fabrication.
QUICK DELIVERY—stock shipment of most standard sizes.
READILY FABRICATED—on standard tools—lathe, punch press, automatic screw machine.
For technical data or prices write for latest bulletins.

POLYPENCO NYLON
nylon and teflon* / stock shapes, finished parts
also available to your specifications
The POLYMER CORPORATION of Penna. • Reading, Penna.
In Canada: Polypenco, Inc., 2052 St. Catherine, W., Montreal, P. Q.
*registered trademark of the Du Pont Company

If you write maker identify as IEN - 5021

CESCO RIGHT... *before your Eyes!*

NEW Temples



No. 374 Comfort-Bridge Goggle — No. 380 Sideshield Comfort-Bridge Goggle

Now, CESCO Comfort-Bridge Goggles have new symmetrical tip temples which are interchangeable—right or left.

These new temples are better looking and have greater strength at the end-piece joint where breakage usually occurs. That's because the flat bar of the temple is at a right angle to the tip.

Attractive flesh-colored plastic insulators are easy to replace. Closed end keeps shaft from poking through. Workers like to wear CESCO Safety Goggles with these new temples. Repairs are easier, service costs lower. They're *"RIGHT... before your Eyes."*

Send TODAY for CESCO literature

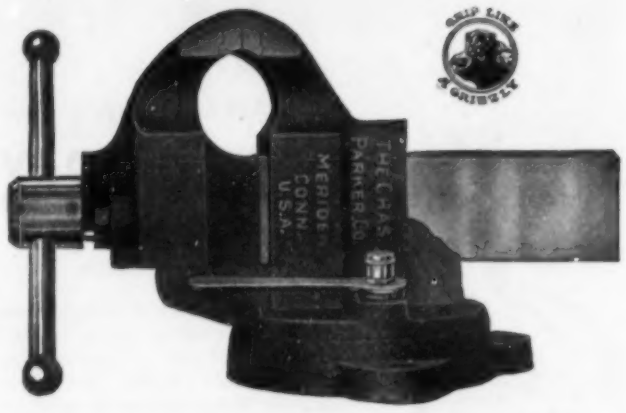
CHICAGO EYE SHIELD COMPANY • 2326 Warren Boulevard, Chicago 12, Illinois

CESCO FOR SAFETY

OFFICES IN: Atlanta, Birmingham, Boston, Buffalo, Cincinnati, Cleveland, Columbus, Dallas, Detroit, East Orange, Houston, Indianapolis, Kansas City, Knoxville, Little Rock, Los Angeles, Mexico City D. F., Milwaukee, Montreal, Peoria, Philadelphia, Pittsburgh, Salt Lake City, San Francisco, Spokane, St. Louis, St. Paul, Toledo, Tulsa, Wichita

If you write maker identify as IEN - 5022

PARKER VISES



The Complete Line

Write for Catalog

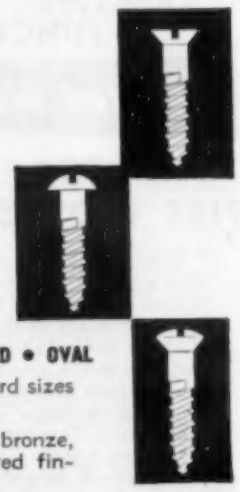
Machinists • Top Swivel Jaw
Combination Pipe • Hinge Pipe
Woodworkers • Utility

STOCKED BY DISTRIBUTORS EVERYWHERE

THE CHARLES PARKER CO., MERIDEN, CONN.

If you write maker identify as IEN - 5023

STAINLESS STEEL



WOOD SCREWS

PHILLIPS • SLOTTED FLAT • ROUND • OVAL

You'll find them **all** in **all** standard sizes at Southern Screw Company.

Also in plain steel, brass, silicon bronze, aluminum, and all popular plated finishes.

Packed for Protection. Southern Screws arrive without loss in indestructible cans with sealed, locking tops.

Shipped from stock. The "special" screw you want may be standard in the millions of wood screws on stock at Southern.

Lubricated Free. Southern wood screws in bulk are lubricated free upon request.

Catalogues and samples free.

Write us your special requirements. Box 1360-E.

SOUTHERN SCREW COMPANY
Statesville, North Carolina • Wood Screws • Stove Bolts • Machine Screws
Factory Warehouses:
North Bergen, N. J. • Los Angeles 23, Calif. • Chicago 10, Ill. • Dallas, Texas

If you write maker identify as IEN - 5024

Cut Maintenance Costs with CARBOLOY MASONRY DRILLS

Anchoring machinery

Stringing electrical conduits

Installing plumbing

Get fast, clean, deep holes, at *any* angle, in concrete, asphalt, tile, brick, slate, marble, etc.

Carboloy Masonry Drills won't pack or stall. Rotary-drill *any* masonry continuously to any depth. Superhard Carboloy cemented carbide cutting tips assure long drill life. Available separately, or in job-designed kits. Sizes 3/16" through 1½".

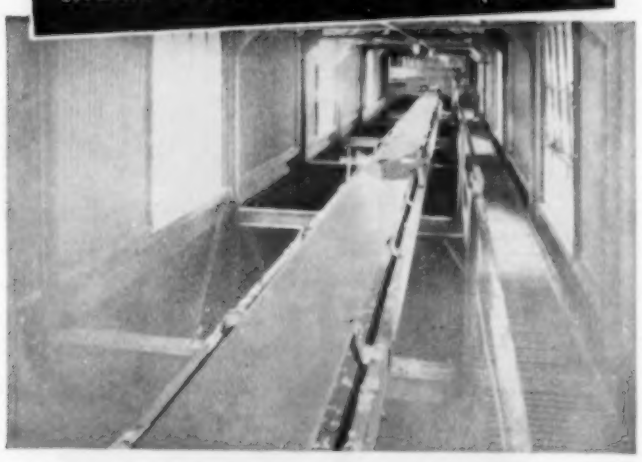
For complete information contact your distributor or write —

CARBOLOY
DEPARTMENT OF GENERAL ELECTRIC COMPANY
11177 E. 8 Mile Boulevard, Detroit 32, Michigan

"Carboloy" is the registered trademark for products of Carboloy Department of General Electric Company.

If you write maker identify as IEN - 5025

Better rubber products are made with Du Pont NEOPRENE



Neoprene conveyor belt lasts 4 times longer than other types . . . saves $4,800 for plant

At a large California seed-processing plant, ordinary conveyor belts lasted only two years at most. Attack by oils from cottonseed, flax seed and soya beans separated the belt plies and caused surface blisters. And the V-shaped wooden "plows"—used to nudge seeds off the belt into storage bins—snagged the blisters and tore the belt covers.

Then a 5-ply belt with neoprene covers was installed. After eight years the neoprene belt shows no signs of deterioration or serious wear—*four times the service life of the other belts.* And its condition indicates it will be good for another two to four years! Savings on this one belt alone are already $4,800—another example of how neoprene's abrasion resistance, even after severe exposure to oil and grease, saves on replacement costs.

Longer service is typical of the important advantages that thousands of neoprene products are bringing industry today. While Du Pont makes no finished products of neoprene, your supplier of rubber goods will gladly tell you about the neoprene products he sells.

FREE! THE NEOPRENE NOTEBOOK

Each issue describes new neoprene products . . . improved old products . . . tips on reducing maintenance costs. Write today for your free subscription. E. I. du Pont de Nemours & Co. (Inc.), Rubber Chemicals Div., IE-5, Wilmington 98, Delaware.

NEOPRENE
The rubber made by Du Pont since 1932

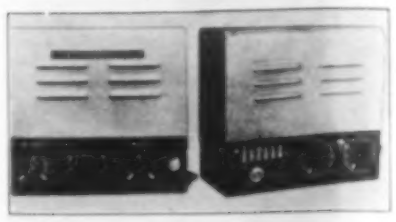
DU PONT
REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

If you write maker identify as IEN - 5027

TIMING . . Electronic units for relay actuation on repeat cycle

Source: G. C. WILSON & COMPANY
1950 Eighth Ave., Dept. IEN, Huntington, W. Va.



For sequence control

Model 2, to the left in the illustration, and Model 3, to the right, are new electronic repeat cycle timers for operation on 110-volt 60-cycle ac. The timing interval can be set on Model 2 for an "on" interval from 0.2 to 150 sec. and for an "off" interval of 0.1 to 900 seconds. Model 3 has a range between 0.01 and 6 sec. in both "on" and "off" positions. Both units operate single-pole double-throw relays rating 5 amp. on 110-volt ac. Both are assembled in steel housings measuring 10 by 5 by 9 inches.

The timing interval is obtained by charging two resistance capacitance networks by means of an electronic tube and a voltage regulator tube. One cycle initiates the next, in continuous sequence, until the unit is turned off. Timers for dc. operation also are available.

If you write maker identify as IEN - 5028

ADHESIVE . . Flexible animal glue for paper, leather, leatherette liners

Source: SWIFT & COMPANY
4200 Packers Ave., Dept. IEN, Chicago 9, Ill.

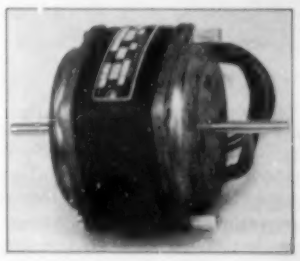
Supplied in 5 lb. cakes

Econoflex trade names a new non-warping flexible animal glue for use on paper specialties, set-up boxes and as an adhesive for paper, leather, leatherette coverings and liners. It can be applied by hand or in connection with semi-automatic or automatic machines. It provides a quick strong tack that will remain workable for a considerable period of time. Low viscosity combines with high solids content for free machining, quick melt-down and smooth film transfer.

If you write maker identify as IEN - 5029

MOTOR . . Polarized synchronous rates 0.3 oz. in. torque, 3,600 rpm.

Source: NATIONAL PNEUMATIC CO.
125 Amory St., Dept. IEN, Boston 19, Mass.



Bulletin R-25

Type RBCP-2510 is a new polarized synchronous motor in production at the company's Holtzer Cabot Motor Division. The motor pulls into synchronous speed with the rotor in the same position with respect to polarity of the motor field. A typical application is drive for an instrument type dc. to ac. synchronous chopper. Operation in continuous duty is on 40 deg. C. temperature rise with connection to a 110-volt 60-cycle ac. circuit. Input is 12 watts.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5030

ALLIED world's largest distributor of
ELECTRON TUBES FOR INDUSTRY

IMMEDIATE DELIVERY FROM STOCK

ALLIED stocks for *quick shipment* the world's largest distributor inventory of special-purpose electron tubes. We specialize in supplying the needs of industrial, broadcast, governmental and other users. To save time, effort and money—phone, wire or write to ALLIED for fast shipment.

Refer to your ALLIED Catalog for *all* electronic supplies. Write today for a FREE copy of the complete 268-page 1954 ALLIED Electronic Supply Guide.

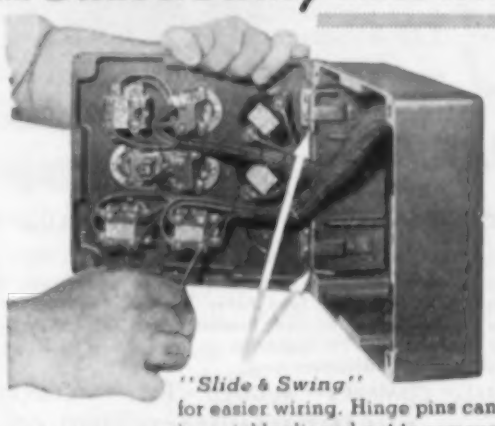
ALLIED RADIO
100 N. Western Ave.
Dept. 14-E-4, Chicago 80, Ill.

Everything in Electronics from One Dependable Source

If you write maker identify as IEN - 5031

FOR Easier Wiring — *Square D* OIL-TIGHT PUSHBUTTON STATIONS

with "*Slide & Swing*" HINGE COVERS



"Slide & Swing" for easier wiring. Hinge pins can be quickly slipped out to remove cover when installing units.

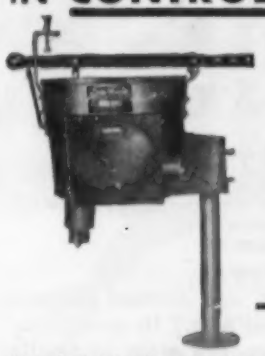
Write for Bulletin 9001 Type T. Address Square D Company, 4041 North Richards Street, Milwaukee 12, Wisconsin.

ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

SQUARE D COMPANY

If you write maker identify as IEN - 5032

FOR DISPENSING MELTED WAX IN CONTROLLED AMOUNTS



Sta-Warm thermostatically controlled "CN" pots of 2-4-8 qt. and up to 25 gal. sizes will heat and store melted wax, dispensing a drop or two (or a small stream) as desired through needle valve orifice. Single phase 110 or 220 v.

"CN" dispensing tanks of 5-10-15-25 gal. also available in other voltages.

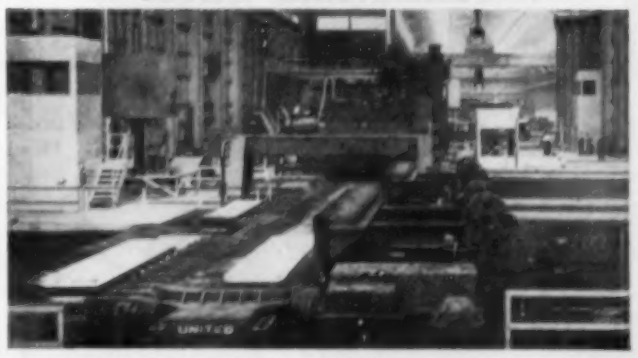
Hand held electrically heated wax dropper of ½ or 1 pt. or 1 qt. capacity is used for direct application to work. Needle valve dispenser. Ideal for laboratory as well as production line use. 110 or 220 v., A-C or D-C with 150 step rheostat temperature control.

INQUIRE for catalog sheets describing the complete line of Sta-Warm wax melters.

Sta-Warm ELECTRIC CO.
560 N. CHESTNUT ST., RAVENNA, OHIO

If you write maker identify as IEN - 5033

24 HOUR BLOOMING MILL OPERATION REQUIRES OKONITE CABLES



The entire blooming mill, from the 5,000 hp motors for the two rolls to the control circuits is wired with Okolite-Okoprene.

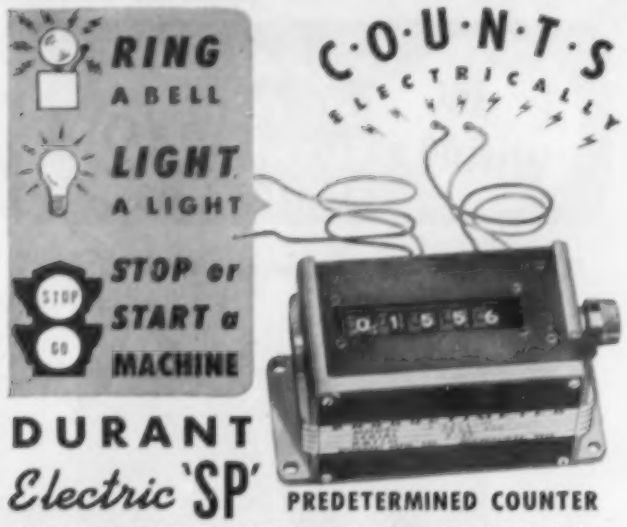
Every piece of equipment, including electrical wires and cables, was selected for 24-hour-a-day operation at the new blooming mill of the Granite City Steel Co. in Granite City, Ill. High and low voltage circuits are all wired with Okolite-Okoprene, the mold-cured, rubber-insulated cable that has established a reputation for dependability and long service life in *every* industry.

For information on Okolite-Okoprene cables, write for Bulletin IE-9000. The Okonite Company, Passaic, N. J.

2355

OKONITE *insulated cables*

If you write maker identify as IEN - 5034



DURANT
Electric 'SP' PREDETERMINED COUNTER

(COUNTS ELECTRICALLY and CLOSES SWITCH AT END OF PRE-SET COUNT)
Eliminates costly over-runs or time consuming under-runs. Actuated by Photo Electric Cell, Tube, Relay, or Contact Switch. Counter can be located where desired. Predetermined count may be set at any figure to 99,999. Hundreds of applications in all phases of production and instrument work.

SMALL • COMPACT • RUGGED • FAST • ACCURATE

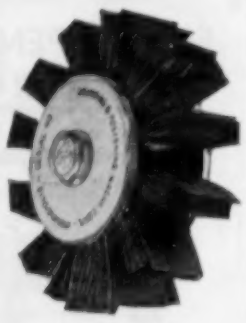
Send for Catalog No. 502

DURANT MANUFACTURING CO.
1930 N. Buffum St. Milwaukee 1, Wis.
130 S. Water St. Providence 3, R. I.
Representatives in Principal Cities

PRODUCTIMETERS 75th ANNIVERSARY
Count Everything

If you write maker identify as IEN - 5035

NEW VONNEGUT POLISHING HEAD WEIGHS JUST TWO POUNDS



FITS MOST ANY POWER TOOL

Now — a truly "bantam weight" Vonnegut Polishing Head for polishing curved and formed surfaces. (An excellent deburring tool also.) Its small, 6½" diameter lets it get into concave areas of smaller radii that can not be reached with the 16 and 32 brush heads. The twelve strips of abrasive — each only 1½" wide—and the smaller diameter requires less power, permitting use of smaller portable tools than needed for the larger heads. The combination —lighter head and tools—makes it ideal for sustained portable operations. Write for details.

Grinding and Polishing Machinery Corp.
SUCCESSORS TO VONNEGUT MOULDER CORPORATION
2530-D Winthrop Avenue, Indianapolis 5, Indiana

If you write maker identify as IEN - 5036

PILLOW BLOCK
BALANCING WAYS

Built in
1,000
2,000
5,000
10,000
20,000
Capacities

Especially suited for large diameter work, as a sub-base can be made of proper height to give necessary clearance for work. Anderson Pillow Block Balancing Ways are precision built with chilled iron discs which rotate with minimum friction on sensitive special bearings. Many manufacturers have endorsed them for efficient, static balancing.

ROCKFORD Anderson BROS. MFG. CO. ILLINOIS

Write for Bulletin No. 5-35

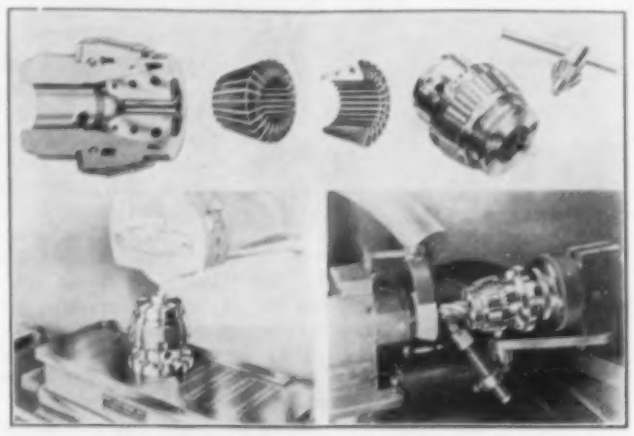
ANDERSON BROS. MFG. CO., Rockford, Ill.

Balancing Ways, Roto Checkers, Hand and Power Scrapers, Spotters, Hand and Power Hydraulic Straightening Presses.

If you write maker identify as IEN - 5037

CHUCK . . Rubber-steel collet design for work or tool holding on a machine

Source: JACOBS MFG. CO.
Jacobs Road, Dept. IEN, West Hartford 10, Conn.



Hardened steel jaws in Hycar rubber

Cylindrical work, or tool shanks, from $\frac{1}{16}$ to 1⅜ in. in diameter, are accurately centered and securely held by this new Model 96 Rubber-Flex collet chuck and its 11 interchangeable rubber-steel collet elements. The smallest of these elements, for work to $\frac{1}{16}$ in. in diameter, has an adjustment range of $\frac{1}{16}$ inch. The others provide ⅛ in. of adjustment on diameter.

Each chuck is checked with a complete set of collets with requirements that an indicator reading must be within 0.0007 in. at the nose and 0.0025 in. at a distance of 3 in. from the nose, in sizes larger than ¼ in., or within 0.0012 in. at 1 in. from the nose in ¼-in. or smaller units.

The chuck represents further development of the hand wheel operated unit for a lathe spindle previously described IEN-9261-49. The new design is particularly suited for use on machines for boring, grinding, milling as well as on lathes.

Two models differ only in the rear mount which is a No. 5 Jacobs taper in one case and a flange in the other. The flange assembly can be clamped to a machine table or to a face plate. Work reaching through it can be handled in the latter case. The hard steel body is fitted with a conical bore at the front to center the collet. Mounted on the body, by means of a deep groove ball bearing, is a hardened steel geared sleeve with internally ground threads to engage the hardened steel nose that bears on the outer end of the collet. The sleeve is rotated by hand for initial tightening, then is tightened finally by turning the key that engages the teeth at the back of the sleeve.

The work is gripped by this tightening action to which is added a self-tightening toggle action when the resiliently supported steel jaw elements apply toggle action as a result of torque between the work and the chuck. List price for the taper bored mount is $135 and for the flange mount is $150. The collets add $12 each.

If you write maker identify as IEN - 5038

Edward Blake Co., 435 Cherry St., Dept. IEN, West Newton, Mass., has set up a department with its own grinding machinery for precision tap sharpening. It has established similar facilities through its representative in San Diego, Calif. The service is intended for customers who do not use a sufficient number of taps to warrant purchase of the grinding machinery. It will serve also as a test department for manufacturers who desire to purchase grinding machinery for the sharpening job.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5039

A PAID NEWS ADVERTISEMENT BY MATHEWSON MACHINE WORKS

NEW ADJUSTABLE DRILL JIG eliminates layout; cuts drilling time

Used for drilling holes through round stock and hex stock from ¼" to 2" and cap screws from ¼" to 1¼", the new Mathewson Adjustable Drill Jig eliminates layout and can cut drilling time on small lots to a fraction. And it eliminates the costs of special jigs for larger quantities. Holes for cotter pins, set screws, drive pins for bayonet joints, oil holes in tubular sections, and wiring holes in cap screws, are all typical of the operation that can be done more economically with this jig. Hole diameters range from .052" to .531", using your A.S.A. standard slip bushings. The hardened V-block has two 60-degree V's for centering round or hexagonal stock, one for ¼" to $\frac{21}{32}$" diameter, one for $\frac{21}{32}$" to 2" diameter. Adjustable stop for locating work longitudinally for drilling any distance from end, may be used on either side. Adjustable bushing carriers hold slip bushings and clamp work securely. Jig highly successful in permitting use of inexperienced drill operators. For circular write to **Mathewson Machine Works,** 26 Hancock Street, Quincy, Mass.

If you write maker identify as IEN - 5040

KEEP ALL YOUR TRUCKS IN SERVICE ALL THE TIME

with Nutting Demountable RUBBER TIRED WHEELS

You don't have to buy expensive complete new wheels when tires are worn! Bolted assembly permits tire replacement in minutes—No special tools!

Next time you need new wheels, casters or trucks, change to Nutting Demountables. No stretch or creep under severest service—and only Nutting, pioneers in the field, has sizes and capacities for every type of truck or trailer.

JUNIOR CATALOG 54-G

For details and a representative listing of the most complete floor truck line in America write for Junior Catalog 54G . . . or consult classified phone directory under "Trucks" or "Casters" for nearest Nutting representative.

SINCE 1891 Nutting TRUCK AND CASTER CO.
2015 DIVISION ST., FARIBAULT, MINN.
Export Sales: School International, Inc., 4237 North Lincoln Ave., Chicago 18, Ill.

If you write maker identify as IEN - 5041

the Solution to your BIG PROBLEM is often...

a little Different set screw

It is amazing, the big difference in product performance that a tiny change in a little set screw will make. That's what over 1500 manufacturers of famous products have discovered, ever since 1935. Billions of regular and special types of set screws supplied by Setko, are proof that these "slightly different" set screws can lick vibration, improve close-precision setting, cut down costs on every kind of product from radios to farm tractors and from lawn mowers to washing machines. Find out for yourself, the many new and different kinds of Setko Set Screws, by sending for the brand new Setko Catalog No. 19, just off the press. Simply write your name and address on the margin of this page, tear and mail to us today.

This New FREE Book Tells you why over 1500 Leading Manufacturers rely on Setko to supply Improved and Special Types of Set Screws to solve puzzling problems.

Set Screw & Mfg. Co.
5 Main Street
Bartlett, Illinois • Suburb of Chicago
We specialize in solving Puzzling Set Screw Problems

A few of the famous users of Setko Set Screws

NESCO · Bell & Howell · Addressograph-Multigraph Corp · American · LAU · Porter-Cable

09NED

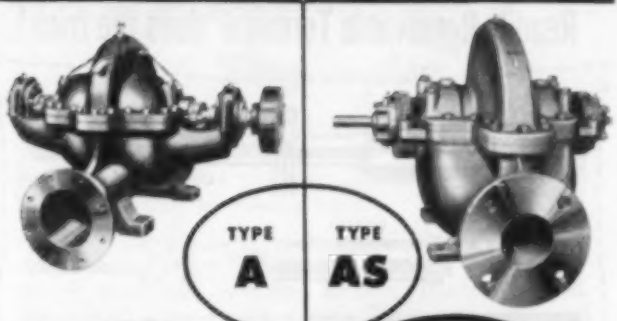
If you write maker identify as IEN - 5043

SPLIT-CASE BOOSTER PUMPS

Packing Gland and Mechanical Seal Types

WIDEST RANGE OF CAPACITIES, HEADS & HP IN ONE OF AMERICA'S MOST COMPLETE LINES

PACKING GLAND CONSTRUCTION | MECHANICAL SHAFT SEAL CONSTRUCTION



A Up to 70,000 gpm
Up to 300 ft. head

AS Up to 750 gpm
Up to 230 ft. head

PEERLESS PUMPS

Request Bulletins:
Bulletin No. B-1300 for Type A;
Bulletin No. B-1350 for Type AS

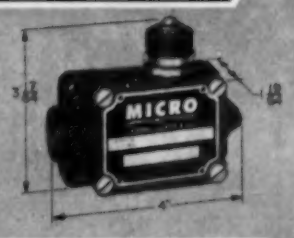
PEERLESS PUMP DIVISION
FOOD MACHINERY AND CHEMICAL CORPORATION
301 West Avenue 26, Los Angeles 31, Calif. • New York; Indianapolis; Chicago; St. Louis; Atlanta; Dallas; Phoenix; Los Angeles, Fresno, Calif.

If you write maker identify as IEN - 5044

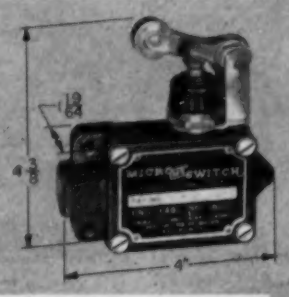
MICRO SWITCH Precision Switches

A PRINCIPLE OF GOOD DESIGN

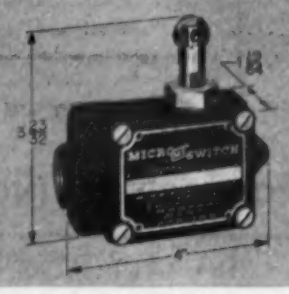
MICRO SWITCH "BAFI" switch with sealed plunger actuator. Underwriters' listed for 1 HP, 115 volts a-c; 2 HP, 230 volts a-c. Circuit arrangement—single-pole, double-throw.



MICRO SWITCH "BAFI" switch with sealed roller lever actuator. Roller arm is adjustable horizontally through 360 degrees, vertically through 225 degrees.



MICRO SWITCH "BAFI" switch with roller plunger actuator. Can be used with cams having approach angle of 30 degrees or less. Roller adjustable to any angle of approach.



Here's a HIGH CAPACITY switch to meet exacting plant applications

Many plant applications call for installation of a switch of more than average electrical capacity.

MICRO SWITCH "BAFI" general utility precision switches meet this requirement with the capacity to make and break steady state currents of 20 amperes, 125, 250 or 460 volts a-c. They will handle inrush currents as high as 75 amperes. They are suitable for controlling tungsten filament lamp loads on a-c current.

The MICRO SWITCH "BAFI" switches are typical of a wide variety of MICRO SWITCH designs which have proved successful in countless industrial applications. They are used as safeties, limits and interlocks to make present plant equipment more automatic, safer and more productive. These switches are carried in stock by 176 MICRO SWITCH Distributors in 155 key cities.

MICRO SWITCH
A DIVISION OF MINNEAPOLIS-HONEYWELL REGULATOR COMPANY
FREEPORT, ILLINOIS

If you write maker identify as IEN - 5046

CLEANING . . Rotary brush machine to scrub, sand, wax and polish a floor

Source: UNITED FLOOR MACHINE CO.
7715 S. Chicago Ave., Dept. IEN, Chicago 19, Ill.

Unico S12-B Aero

A toothed belt, wire reinforced, neoprene covered, rides on toothed pulleys between the ¼-hp. motor and the 12-in. brush in this new floor machine. The drive connection takes the place of gears, requires no lubrication, is noiseless. The brush is driven at 190 rpm. It can be lifted from the floor on 3-in. rubber wheels at the rear of the housing. The wheels move up out of the way while the machine is in operation, do not interfere with performance.

Operating weight on the brush is 42 pounds. Overall dimensions are 15½ by 11¾ by 12 in. to the top of the motor including the brush. The 12-in. spread is from a brush block measuring 10¼ in. in diameter. A tank mounts on the handle to convert the machine from polishing to wet scrubbing. A 35-ft. rubber covered trailing cord, a plug and one polishing brush are standard equipment.

If you write maker identify as IEN - 5047

MACHINING . . Ultrasonic vibrator employs abrasive to cut hard materials

Source: RAYTHEON MFG. CO.
138 River St., Dept. IEN, Waltham 54, Mass.

To 25,000 cps.

Abrasive particles, in liquid suspension, are driven against a work surface by ultrasonic vibrating action at the rate of about 25,000 vibrations per sec. in this new machine. The particles cut the surface away from substances such as carbides, ceramics, glass, hardened steel, molybdenum, tungsten, quartz to produce accurately the shape presented by the end section of the tool secured in the magnetostrictive transducer. A ⅜-in. diameter tool, which need not be hardened, will cut tungsten carbide at the rate of 0.01 in. per minute. Glass can be cut at 0.2 in. per minute.

The company is prepared to supply the equipment, with its associated electronic generator, tool driving transducer, supporting stand work holder and abrasive circulating equipment to meet given requirements. Irregular and intricate outlines can be cut as easily as symmetrical ones.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5048

ENGINEERED FOR COMFORT AND SAFETY!

McDonald AIR-SUPPLIED HOODS

APPROVED BY THE U. S. BUREAU OF MINES

SAND BLAST HOOD (shown at left) Heavy cape, double plastic coated. Muslin inner collar gives protection against dust. Hinged screen cover protects window.

BLASTFOE ABRASIVE HOOD One-piece cloth cape, impregnated with Neoprene to cushion impact of flying particles, covers entire unit. Other features identical with Sand Blast Hood.

LEAD HOOD A muslin inner collar, in addition to the plastic cape insures against penetration of lead dust and fumes encountered in grinding operations.

Write today for bulletin and prices

- ✔ LARGE REPLACEABLE WINDOWS
- ✔ SAFETY LATCH
- ✔ RIBBED HEADPIECE
- ✔ SUSPENDED HAMMOCK HEADGEAR
- ✔ NO-FOG AIR FLOW
- ✔ POSITIVE AIR FLOW (with new McDonald Air-Flow Control Valve)

B-F-McDonald COMPANY
Manufacturers & Distributors of Industrial Safety Clothing & Equipment

5721 West 96th St., Los Angeles 45—Other Offices in San Francisco and Houston

If you write maker identify as IEN - 5049

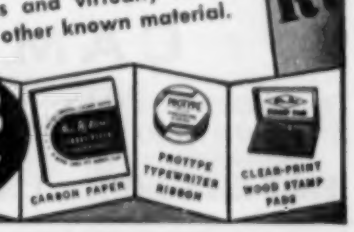
INDUSTRIAL INKS To Mark Anything!

Whatever the substance, Phillips has an ink to mark it permanently and legibly—or can make one. Marking experts insist on "Clear Print" Wood Block Stamp Pads and Opaque Inks. They get clear, sharp, fast-drying impressions. Also inks for brush, pen, stencil or machine application available in a variety of colors and quantity containers.

★ Quick Laboratory Service On Your Problem Markings

★ To Permanently Mark . . . Metals, Plastics, Glass, Wood, Paper, Leather, Ceramics—glazed, varnished or lacquered surfaces and virtually every other known material.

J. A. PHILLIPS, President
PHILLIPS PROCESS CO. INC.
192 MILL STREET
ROCHESTER 14, N. Y.



If you write maker identify as IEN - 5050

KIPP Air Grinders

MODEL JA
50,000 R.P.M.
Weight 12 ounces; length 6¾ inches; chuck size ⅛ inch. Wheel guard removed for better illustration.

$42 IN U.S.A.

THEY GRIND--NOT JUST RUB!

The RPM's stay up while grinding . . . not only when the grinder runs idle.

It is an established fact that surface speeds must stay up to approximately a mile a minute if you want to grind . . . not just rub. Every mechanic knows this, but an inexperienced buyer may order tools that maintain proper grinding speeds only when running idle. The speed of Kipp air grinders drops but slightly when put to work. That means better work . . . longer wheel life.

MADISON-KIPP CORP.
224 Waubesa St., Madison, Wis., U.S.A.

Write for KIPP Air Tool Catalog AT 3006

If you write maker identify as IEN - 5051

Here's the easy way to spot railroad cars

It's no back-breaking job to move railroad cars—when a Link-Belt Car Spotter is on the job. One man can take two or three turns of rope on the motor-driven capstan—and spot cars right where they're wanted. Cuts loading and unloading time. Reduces demurrage charges. Two sizes: 5 and 10 hp, developing 5,000 and 10,000 pounds of rope pull, portable or stationary models.

Link-Belt offers a complete line of car spotters . . . also specializes in drum type puller applications.

Cuneo Press, Chicago, has used Link-Belt Car Spotters for 20 years.

LINK-BELT
CAR SPOTTERS

Write today for fact-packed Book 2092

LINK-BELT COMPANY: Plants: Chicago, Indianapolis, Philadelphia, Colmar, Pa., Atlanta, Houston, Minneapolis, San Francisco, Los Angeles, Seattle, Toronto, Springs (South Africa), Sydney (Australia). Sales Offices in Principal Cities. 13,181

If you write maker identify as IEN - 5052

CAMBRIDGE Moisture Indicators

Cambridge Moisture Indicators are accurate, rugged instruments built for continuous shop service to indicate moisture content of various hygroscopic materials. Insertion model has measuring element enclosed in a blade. Surface model has the element mounted on under side for surface contact. Adjustable pointer is provided for fixing reference points of surrounding air.

Surface Model

Insertion Model

For use in Hat, Printing, Textile, Food industries and in processing Paper, Wool, Cotton, Rayon, Fur, Cereals, etc.

Send for literature

CAMBRIDGE
INSTRUMENT COMPANY, Inc.
3710 GRAND CENTRAL TERMINAL NEW YORK 17, N. Y.
Pioneer Manufacturers of
PRECISION INSTRUMENTS

If you write maker identify as IEN - 5053

Boost air cylinder operation with Schrader Quick Exhaust Valves

Quick Exhaust Valve Schrader #3340

The completely automatic Schrader quick exhaust valve provides instant passage of exhaust air to the atmosphere.

Designed for mounting at cylinder ports, it speeds up piston action in either direction by dumping the air to the atmosphere, thus eliminating the usual slow-up caused by air traveling a distance to find its way to exhaust.

Complete catalog gives full information on the quick exhaust valve as well as hundreds of other products that will help you get the most out of air power in your plant. Send for it today.

A. SCHRADER'S SON
Division of Scovill Manufacturing Company, Incorporated
458 Vanderbilt Ave., Dept. D-37 Brooklyn 38, N. Y.

If you write maker identify as IEN - 5054

Geared to Industry's Production Demands Since 1887

Offering the most complete line of washers available today . . . all types and sizes, all materials, all finishes. More than 25,000 sets of dies. Let us quote on your requirements.

WROUGHT WASHER MANUFACTURING CO.
The World's Largest Producer of Washers
2207 S. BAY ST., MILWAUKEE 7, WIS.

If you write maker identify as IEN - 5055

SHEARING . . Pneumatic machine, throatless, to 3/16 in. in mild steel

Source: BEVERLY SHEAR MFG. CO.
3009 W. 111th St., Dept. IEN, Chicago 43, Ill.

Cuts to outline

Double acting cylinder with brass body, chromium plated piston rod and steel heads is trunnion mounted on the top of this new throatless shear. The piston rod is linked to the toothed operating lever for the upper shear blade. Its action is controlled by a four-way solenoid valve in connection with adjustable limit stops and switches that control the power stroke and the power return of the shear blade and the piston.

The body of the shear is made of alloy steel. High carbon chromium steel blades are ground to provide clean, burr free action. The blades are adjustable for wear and quickly interchangeable. Operation is on connection to a 60 to 100-lb. shop air line and to a 110-volt ac. power source.

If you write maker identify as IEN - 5056

LUBRICATING . . Oil coolant particularly for use on diamond wheels

Source: NATIONAL DIAMOND LABORATORY
108 Fulton St., Dept. IEN, New York 38, N. Y.

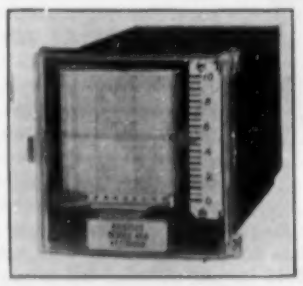
$3 per pint
$6.75 per gallon

Diamond Wheel Oil is a new combination of natural and synthetic oils for wick feed in small quantity to the surface of a diamond grinding wheel while it is revolving. The oil cushions the work but does not prevent efficient grinding. It assists in producing a good finish and conserves life of the wheel. Sludges and slurries are easily broken down for diamond dust reclamation. Packaging is in pints, quarts and gallons. Color is blue or white.

If you write maker identify as IEN - 5057

CONTROL . . Pneumatic instrument regulates pressure, temperature, flow

Source: BRISTOL COMPANY
107 Bristol Road, Dept. IEN, Waterbury 20, Conn.



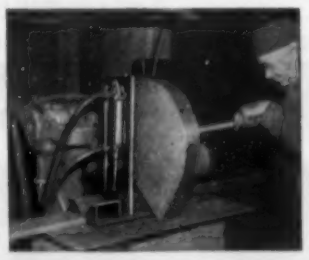
Bulletin A106

Metagraphic trade names a new control instrument consisting of a three-part assembly of air operated transmitter, receiver and controller. Each unit can be installed at a point where it operates best. Together, the three units measure, indicate, record and control variables such as pressure, vacuum, temperature, liquid level, differential pressure, flow. The three are connected into a 3 to 15-lb. air circuit, for on-off, proportional, proportional plus reset, proportional plus derivative, and proportional plus reset plus derivative action.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5058

Clamping Device on Abrasive Cut-off Saw



Operated by NOPAK MODEL E CYLINDER

This efficient clamping device was developed by a distributor of industrial supplies, to speed up the cross-cutting of pipe, rod stock, angle iron and other shapes. A NOPAK 2" x 8" Model "E" Cylinder, suspended from the top of an "A" frame, supplies the power which holds the stock firmly in place while the abrasive saw does the cutting quickly, squarely and accurately.

Cylinder is actuated by a NOPAK Model "F" Foot Operated Valve which leaves operator's hands free . . . enables him to move about between cuts until he again steps on foot lever to release clamp. Manual manipulation of clamps is eliminated, valuable time and effort saved.

NOPAK Cylinders and Valves are used in thousands of similar applications, to accelerate production, reduce costs, minimize fatigue. Ask your NOPAK representative to show you the NOPAK Application Manual.

Nopak Model "F" Foot Valve

GALLAND-HENNING NOPAK DIVISION
2760 SOUTH 31st STREET • MILWAUKEE 46, WISCONSIN

Refer to Sweet's File for Product Designers or write for Bulletin SW-2. Representatives in Principal Cities

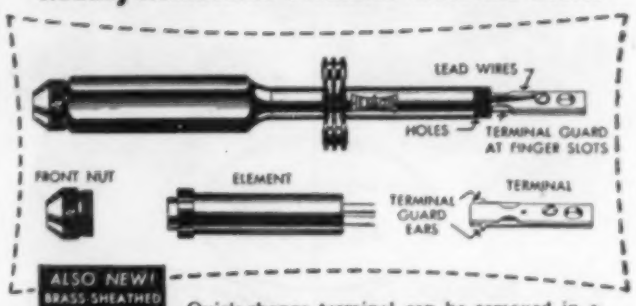
NOPAK VALVES AND CYLINDERS
DESIGNED for AIR and HYDRAULIC SERVICE

If you write maker identify as IEN - 5059

NOW! CHANGE SOLDERING IRON ELEMENTS IN A JIFFY! —with HEXACON

*Patent Applied For

Readily Removable Terminal* does the trick!



ALSO NEW! BRASS-SHEATHED ELEMENTS Easier to Replace—Better Protection

Write for catalog showing 40 industrial soldering irons of every type and size.

Quick-change terminal can be removed in a second or two, permitting replacement of element in a fraction of the usual time. By simply depressing terminal guard at the finger slots, the terminal comes out in a jiffy — no longer necessary to fish element lead wires around terminal.

HEXACON — Industry's No. 1 Soldering Iron

HEXACON ELECTRIC COMPANY
155 W. CLAY AVE., ROSELLE PARK, NEW JERSEY

If you write maker identify as IEN - 5060

THE RIGHT BOX CAN DO A JOB FOR YOU

Your product or samples packaged in a sturdy, transparent container . . . one complete, easily handled unit for your salesmen . . .

Use Lite-TUFF PLASTIC BOXES

Lite-TUFF Standard Boxes and Containers of Non-Flam* light weight plastic, made of approved material, are no fire hazard. They are available in a wide variety of compartment arrangements. LOW DIE COST ON CUSTOM MADE.

- Very Tough—will not crack or shatter in normal use.
- Stainless steel hinges.
- Resistant to most chemicals—samples supplied for tests.
- May beautifully heat embossed.
- All transparent or color combinations.
- Make your own compartment layout on our Plot Plan Sheets.
- State your problem—let us solve it.

Full information and Plot Plan Sheets sent upon request . . . Dept. A4
*Reg. U. S. Pat. Off.

SHOE FORM CO. INC., Auburn, New York

If you write maker identify as IEN - 5061

HERE'S MORE INFORMATION TO HELP YOU UNDERSTAND YOUR PUMPING PROBLEMS

"Selecting the Correct Viking Pump in Ten Easy Steps" is a ten-page booklet designed to help engineers in choosing the right Viking Pump for each application. This folder is free upon request.

If you would like to have one or more copies, write today for Bulletin TS-6F.

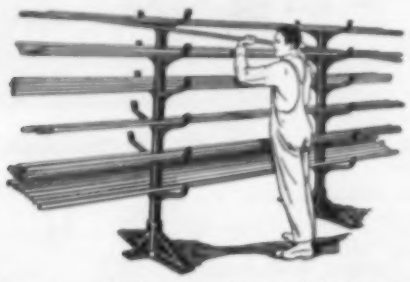
VIKING AN HONORED NAME IN PUMPING

See Our Catalog in SWEETS

VIKING PUMP COMPANY
CEDAR FALLS, IOWA

If you write maker identify as IEN - 5062

for EFFICIENT HANDLING and ORDERLY STORAGE



You save time, both in storing and in issuing, when you use Brown Sectional Racks. Open sides speed handling. Complete visibility permits quick selection to save waiting mechanics time.

Maximum flexibility in arrangement is possible because each Brown Rack is independent and self-contained, need not be bolted to floor. Easily relocated. Systemized storage with Brown Racks promotes good housekeeping, cleanliness.

All iron and steel construction, can't burn, bend, sag or warp. Never wear out.

Get these values now! Write for complete specifications and prices on wide range of models and sizes. Brown Engineering Co., 122 N. Third St., Reading, Pa.

BROWN QUICK-SERVE RACKS

If you write maker identify as IEN - 5063

AMAZING NEW COUPLER FOR RECIPROCATING AIR TOOLS

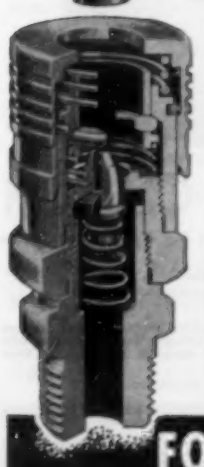
Can't Be Hammered To Pieces!

• No Pulling • No Twisting
• No Turning • No Screwing
—JUST PLUG IT IN

FOSTER*Matic* QUICK DETACHABLE COUPLERS

- Can Be Used Directly With Reciprocating Air Tools Without The Use Of Lead Hoses
- Will Not Fall Apart Will Not Blow Apart
- Steel Body and Sleeve From Solid Bar Stock
- Greater Air Capacity—Small Diameter—Light Weight

Holds tighter without leakage, yet swivels freely, "Dogs" lock—STEEL against STEEL at 45°, and are positioned by floating steel carrier. Eliminates all usual housing wear. Write for NEW descriptive literature FM-3.



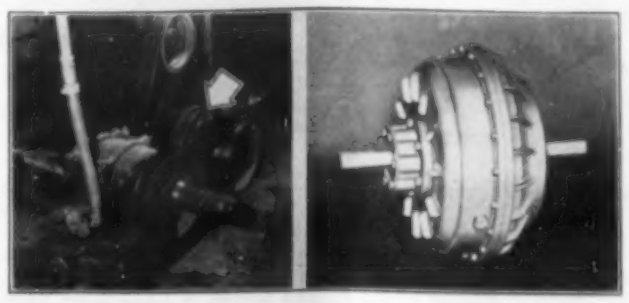
"WE HAVE GOOD CONNECTIONS"

FOSTER MFG. CO. Inc.
2850 GRAVOIS • ST. LOUIS 18, MO.

If you write maker identify as IEN - 5065

DRIVE . . Hydraulic coupling and gearing to hold constant tension

Source: TWIN DISC CLUTCH CO.
1328 Racine St., Dept. IEN, Racine, Wis.



Minimizes maintenance

Tension is maintained at a predetermined point, during a winding operation that involves increasing reel diameter and decreasing reel speed, by this new design of the company's Hydro-Wynd hydraulic drive. The unit applies with a motor and variable pitch sheave on the input side and with direct or belt connection to the driven equipment on the output side. Two new Models 12.2 and 8.4 have been added to the previously designed models 8.4 and 7.4.

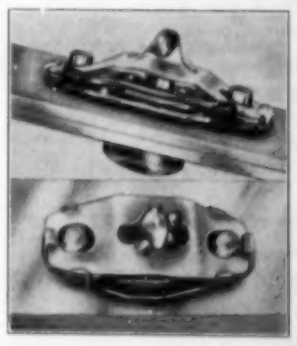
Improved construction features rearrangement of the gearing, new bearing spacing and a new spring loaded seal that employs carbon against Meehanite metal. The drive is particularly suited to wind materials such as cellophane, coated paper, foil, Fiberglas, wire, rubber, steel strip, textiles. Each installation is engineered to meet given requirements.

The coupling and gearing assembly employs a planetary gear set in which the ring gear is connected to the hydraulic coupling impeller, the planet gear carrier is fixed to the runner and the sun gear is integral with the output shaft. The coupling provides automatic "slip" to react with the planetary gearing and transmit increased torque necessary to maintain the desired tension while the output speed decreases and the work reel diameter increases.

If you write maker identify as IEN - 5066

FASTENING . . Secures two sheets in quick locking and opening assembly

Source: LION FASTENER INC.
East Main St., Dept. IEN, Honeoye Falls, N. Y.



Quick acting

Hi-Strength Model HO is a new spring fastener in the company's line, previously described IEN-7261-47. The new unit employs a one-piece stud without cross pins, milled sections or holes. It locks with a quarter turn in clockwise direction and unlocks in the opposite direction. It is self-contained and will not come apart.

Strength in tension tests at 3,000 lb. and in shear at 4,750 pounds. Permissible misalignment between sheets being fastened, at the time of fastening, can be maximum at 0.125 inch. The spring assembly measures 1.490 in. in length. The stud has an oval head $\frac{5}{16}$ in. in diameter. Width is 0.680 in. and height is 0.407 inch.

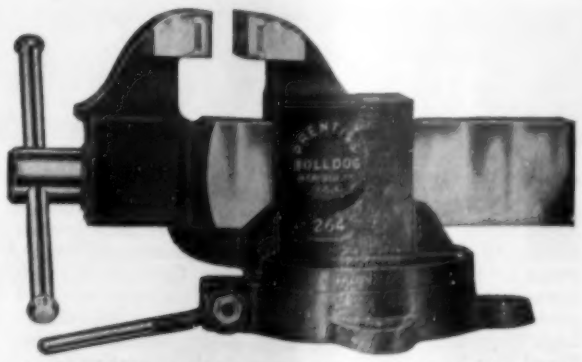
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5067

PRENTISS

"BULL DOG" VISES

Backed by 86 years of time-proven acceptance by industry.



MACHINISTS — TOP SWIVEL JAM — COMBINATION PIPE
HINGE PIPE — WOODWORKERS — UTILITY

Renewable steel jaws that cannot work loose, swivel base with a positive lock plus other features that give you vises that will stand the most severe tests. Send for THE NEW PRENTISS CATALOGUE TODAY.

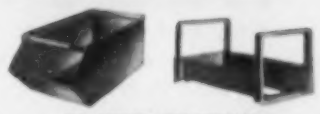
Your Industrial Distributor can supply you

PRENTISS VISE DIVISION
OF THE CHARLES PARKER CO., MERIDEN, CONN., U. S. A.

If you write maker identify as IEN - 5068

STOP excess handling of tools, parts, materials!

Stackbin®-Stackrack® Combinations are the ideal way to minimize parts, tools, materials handling. Stackbins are portable containers, so you can carry materials throughout your process without transferring contents to any other container. Stored in Stackracks, every Stackbin is instantly accessible when it's needed. You never disturb another bin. Hopper fronts on Stackbins provide visibility and accessibility to the materials. Available in 7 sizes, Stackbin-Stackrack Combinations make most efficient use of floor space. With inexpensive Adapters any small units can be stacked on larger units. Related items can be kept in one place. Individual units lock together: no tools, no setup time needed.



STACKBIN-STACKRACK COMBINATIONS

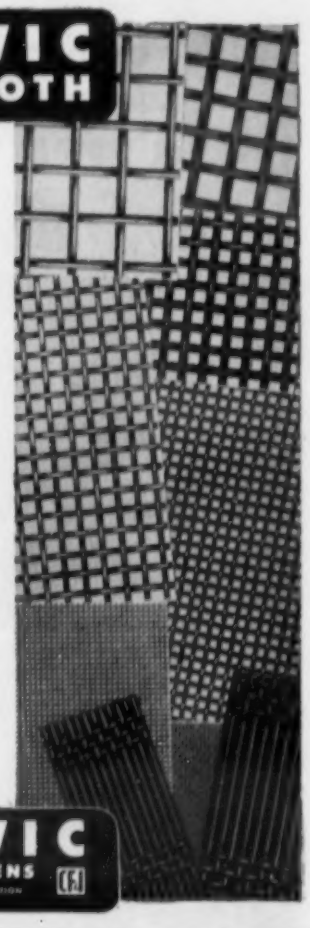
For full information write to **STACKBIN CORP.,**
1077 Main St., Pawtucket, R. I.

Mfgd. and sold in Canada exclusively by Wickware-Stackbin, Ltd., Ottawa

STACKBIN SYSTEM
"Stacked and Still Accessible"

If you write maker identify as IEN - 5069

CAL-WIC WIRE CLOTH



meets all special job demands

Whatever your special job demands may be—filtering, screening, grading, cleaning, or any other type of processing — Cal-Wic Wire Cloth is available in the right weave, mesh or weight to give long-lasting dependable service.

To order, write or phone our nearest district sales office.

THE COLORADO FUEL AND IRON CORP.
Denver and Oakland
WICKWIRE SPENCER STEEL DIVISION
Atlanta • Boston • Buffalo • Chicago
Detroit • New Orleans • New York
Philadelphia

CAL-WIC INDUSTRIAL SCREENS
THE COLORADO FUEL AND IRON CORPORATION

1250

If you write maker identify as IEN - 5070

Stainless Steel Users—

These booklets are for YOU

Free from Frasse—these booklets have been designed to help you select the *best* stainless grade for your particular application.

Included is data on the grades and finishes available, machining rates, heat resistance, heat treatment, mechanical properties and corrosion resistance. Even the new Extra Low Carbon and Precipitation-Hardening grades are covered in detail.

You'll find them handy working tools when faced with stainless steel selection. And if you wish, Frasse engineers will be glad to put their experience and know-how to work for you. For a free copy of these handy booklets, *write Frasse today.*

FRASSE for Stainless Steel

BARS
SHEETS
STRIP
TUBES
PLATES
PIPE
VALVES
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Peter A. FRASSE and Co., Inc.
17 GRAND STREET, NEW YORK 13, N. Y. • WAlker 5-2200
LYNDHURST • PHILADELPHIA • BUFFALO • SYRACUSE • HARTFORD

If you write maker identify as **IEN - 5071**

ORDER
JOHNSON ELECTRIC MOTOR BEARINGS
from Stock

All necessary information is listed in the catalog . . . merely identify the bearing and order by bearing number. There are over 340 different Johnson E M Bearings . . . each one correct in design, alloy and tolerance . . . ready for immediate installation. Order from your local Johnson Distributor.

WRITE FOR CATALOG

JOHNSON BRONZE COMPANY
476 South Mill Street • New Castle, Pa.

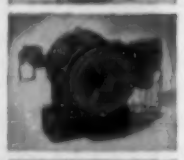
JOHNSON BEARINGS
Sleeve-Type

If you write maker identify as **IEN - 5072**

for original equipment vacuum pumps

call on GAST

Motor-Pump Model 0406—To .6 CFM, 25" vac. Wt. 16 lbs., 10¼" long.



V-belt Model 1550-V2—To 10 CFM, 15" vac. For paper feeding, etc.

Heavy-duty, fan-cooled Model 1065-V4-34. To 28" vac. with ½ HP.

Heavy-duty, fan-cooled V-belt Model 2565-V12A. To 21 CFM, 28" vac.

Some accessories standard.

YOU GET HIGH QUALITY that solves product problems with long-lived high performance . . . a result of dependable rotary-vane design plus rigid quality control.

A WIDE CHOICE OF SIZES from five basic types to 24 CFM or 28" vacuum. Some models oil-less construction. Our volume sales cut your costs!

YOU GET FULL COOPERATION from Gast engineers backed by over 25 years' experience building vacuum pumps for original equipment. For willing cooperation, *call on Gast!*

Write GAST— describing your specific application. Request Catalog and "Ideas" Booklet.

see our catalog in PRODUCT DESIGN FILE or write for copy

Original Equipment Manufacturers for Over 25 Years

GAST ROTARY AIR MOTORS • COMPRESSORS • VACUUM PUMPS (TO THREE H.P.) (TO 50 LBS.) (TO 28 INCHES)
GAST MANUFACTURING CORP., 139 Hinkley St., Benton Harbor, Mich.

If you write maker identify as **IEN - 5073**

ECONOMICAL! DUNKING STATIONS

The safe economical solution to your plant smoking problem! Sipco Dunking Stations prevent fires. Cigarettes, cigars, matches, etc. immediately extinguished—no smoldering — no fire hazard! Built specifically for hard industrial use — and abuse — will last a lifetime.

Unit No. 1 — Heavy cast aluminum canister, attractive metal sign, upright and heavy weighted base for use on floors, aisles, etc.

Unit No. 2 — Same as Unit No. 1 except without upright and base. Easily mounted on walls, columns and posts.

Unit No. 3 — Canister alone with mounting bracket.

Write now for Illustrated folder which gives complete details.

STANDARD INDUSTRIAL PRODUCTS CO.
Dept. N, 116 South Garfield Ave., Peoria, Ill.

USEFUL INFORMATION

NEWS NOTES

If you write maker identify as **IEN - 5074**

AIR CONDITIONING . . Revised information in 1954 Edition of the ASHVE Guide, a 1,640 page book

American Society of Heating & Ventilating Engineers
62 Worth St., Dept. IEN, New York 13, N. Y.

Technical data occupies 1,128 pages of the new 32nd Edition of the "Heating, Ventilating and Air Conditioning Guide". There are 52 chapters grouped into seven sections on fundamentals, human reactions, heating and cooling loads combustion and consumption of fuels, systems and equipment, special systems, instruments and codes. List price is $10.

If you write maker identify as **IEN - 5075**

ALUMINUM . . Design information on aluminum parts made by impact extrusion process

Aluminum Company of America
724 Alcoa Bldg., Dept. IEN, Pittsburgh 19, Pa.

"Impacts" is the company's name for aluminum parts made by the impact extrusion process. These are one-piece seamless semi-hollow or solid parts having forged bases and extruded side walls. Section can be round, square, rectangular, oblong with ribbed, beaded, fluted side walls. Bases can have bosses, lugs, recesses. "Alcoa Impact Fact Book," 16 pages, shows how they are made, variations possible, design suggestions, alloy selection, secondary operations.

If you write maker identify as **IEN - 5076**

BEARINGS . . Reference book of 400 pages on anti-friction bearings and their applications

Morton Bearing Co.
815 Wilde St., Dept. IEN, Ann Arbor, Mich.

Hudson T. Morton, company's president, has published a new textbook and reference guide for engineers, machine designers and bearing users. Title is "Anti-Friction Bearings" and list price is $7.75. It describes types of bearings, selection, lubrication, mounting, load ratings, standards.

If you write maker identify as **IEN - 5077**

BELTS . . Instruction book of 36 pages shows how to splice and repair a rubber conveyor belt

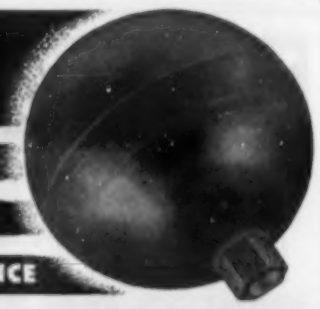
B. F. Goodrich Company
450 S. Main St., Dept. IEN, Akron 11, Ohio

Stepping down belt ends, applying splice materials, vulcanizing, are detailed by pictures and text in new instruction book, "Splicing and Repair". It will be sent upon letterhead request. It tells how to make a splice on the job, quantities of material needed, how to make repairs to conveyor belts.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 5078**

FOR THESE *Extras*



LONGER SERVICE
LESS MAINTENANCE
HIGHER PERFORMANCE

use STAINLESS STEEL
FLOATS

YOU can solve virtually all your float problems by standardizing on Stainless Steel Floats from Chicago Float Works. You get longer service and less maintenance because Stainless Steel Floats resist corrosion and withstand high temperatures and pressures. Extreme strength insures them against collapsing and they always respond perfectly to level fluctuations because of permanently high buoyancy. Install our high quality Stainless Steel Floats and be sure of long, dependable operation!

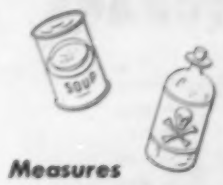
WRITE FOR FREE CATALOG

This illustrated catalog gives complete details on sizes, shapes, spud connections, and engineering data on Chicago's complete line of standard or special floats.

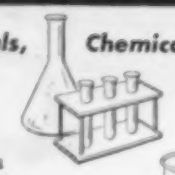
CHICAGO FLOAT WORKS
2326 S. Western Avenue • Chicago 8, Illinois

If you write maker identify as **IEN - 5079**

ALL STAINLESS STEEL METER
MEASURES CORROSIVE LIQUIDS



Measures Foods, Pharmaceuticals, Chemicals and Corrosive Liquors



Constructed *inside and out* of stainless steel, this meter resists corrosive attack and is easy to clean. With it you can get positive metered identification for inventory and cost controls; for tax analysis purposes. With it you can also get accurate quantity control over liquids entering into batch mixed formulas. Rated capacity 100 gpm. Automatic shut-off registers and remote registration systems can be furnished. Write for bulletin OG-403 *Rockwell Manufacturing Co., Dept.* ***5404B,*** *Pittsburgh 8, Pa.*

YOU CAN RELY ON ROCKWELL

Rotocycle meter, cut away to show the all-revolving rotor construction.

ROCKWELL INDUSTRIAL METERS

If you write maker identify as **IEN - 5080**

Proven so satisfactory to others

It will pay you to consider

"SUPER-SOAK" PARTS WASHERS

Simple — Practical. Based on an old, proved principle.

No pumps, sprays, and no handwork.

For the removal of foreign substances, oils, grease, chips, etc., from metal parts.

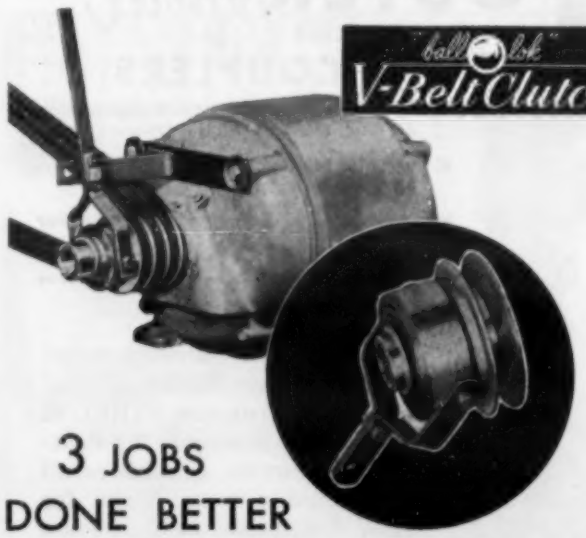
A very satisfactory "job" at a low cost.

Please write for details.

THE SUPER-SOAK COMPANY, INC.
3770 South Pennsylvania Ave. • Milwaukee 7, Wis.

If you write maker identify as **IEN - 5081**

ball-lok V-Belt Clutch



3 JOBS DONE BETTER with a BALL-LOK CLUTCH

HERE are just three of the many clutch problems Ball-Lok Clutches can solve for you:

- **Vari-drive motors and speed reducers—**
- **Intermittent or hi-rate per hour engagements—**
- **All hi-speed V-belt drives—**

Ball-Lok clutches have no friction plates nor internal wearing parts. Feature instant release and a light smooth clutching action which also increases belt life. Ball-Lok clutches are compact, lightweight, easy to install and come complete with pulleys from fractional to 10 hp. Send us your design problem.

COMPLETE INFORMATION AND CATALOG UPON REQUEST

V-Belt Clutch Co.
418 NO. WESTERN AVE., LOS ANGELES 4, CALIF.

If you write maker identify as IEN - 5082

GLASS PRODUCTS

MADE TO *YOUR* SPECIFICATIONS

If work in your laboratory, process plant, dairy, engraving plant, textile or paper mill requires glass products made to your specifications, get Sentinel Glass Co. to do the job for you. Sentinel special glass products—tailor-made to fit the application — offer the advantages of:

- TRANSPARENCY
- NON-CONTAMINATION
- RESISTANCE TO CORROSION
- LOW INSTALLATION AND MAINTENANCE COSTS

Whether you need spirals, beakers, retorts, etc. in odd shapes and sizes or the drilling and grinding of glass, write or phone. We'll give you an estimate promptly and any additional information you may require.

SENTINEL GLASS CO.
HATBORO, PENNA.

PHONE OSBORNE 5-5700

If you write maker identify as IEN - 5083

CAPCO DOCK COVERS OFFER YEAR 'ROUND PROTECTION

Can be installed inside or outside of dock door . . . . models for various purposes.

SOLD AT A LOW COST

...and the cost is especially low because it pays for itself many times...saves time and money over many years.

- PREVENTS ACCIDENTS
- ONE MAN CAN OPERATE
- FIREPROOF
- WATERPROOF
- DURABLE — LONG LIFE
- DEPENDABLE

BEAT THE BAD WEATHER

CAPCO Dock Covers completely enclose the space between car and building doorways, protecting loading and unloading during bad weather. Recommended by safety engineers. No more wet merchandise in the rain . . . no more interruption during winter. Here's your insurance against loss of either heat or refrigeration; you have practically the same as indoor loading.

CAPCO

Distributors in principal cities

622-24 PROSPECT AVENUE • KANSAS CITY 1, MISSOURI

USEFUL INFORMATION

(Continued)

If you write maker identify as IEN - 5085

BATTERIES . . House publication article tells about magnetic handling of dockboards by truck

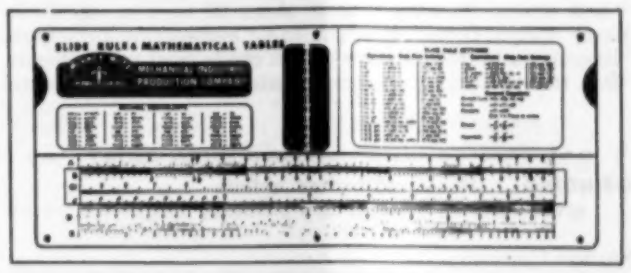
Thomas A. Edison Inc.
51 Lakeside Ave., Dept. IEN, West Orange, N. J.

Feature article of Storage Battery Power, Vol. 24 No. 2, describes freight handling by electric power trucks on a railroad. About 1,500,000 lb. are handled per day. Picking up and placing dockboards was such a chore that an electromagnet, powered by the truck battery, was tried on the power-truck forks. It proved successful. You can request addition of your name to the list to receive the publication regularly.

If you write maker identify as IEN - 5086

CALCULATING . . Cardboard slide rule carries standard scales, functions, equivalents

Mechanical Industries Production Co.
217 Ash St., Dept. IEN, Akron 2, Ohio

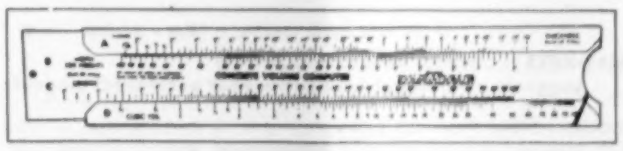


Letterhead request will bring you a copy of the company's slide rule in an envelope punched for a standard three-ring binder. The rule is made of cardboard, measures 10 by 4 in., carries standard A, B, C, D, C-1 and K scales on the face. A window on the face also reads 4-place logarithms. The back carries A, D, S, L and T scales, reads natural trigonometric functions at a window. Slide-rule settings are given for a variety of equivalents. Also printed on the rule are decimal equivalents, trigonometric formulae, mathematical formulae. The company makes thermostats.

If you write maker identify as IEN - 5087

CALCULATING . . Plastic slide rule reads volume of concrete against its three dimensions

Stow Manufacturing Co.
25 Shear St., Dept. IEN, Binghamton, N. Y.



Available free, new plastic "Concrete Volume Computer" is a 6½ by 1½-inch plastic slide rule with three dimension scales. These are for thicknesses from 1¾ in. to 16 ft., width or height from 1 to 100 ft., length from 6 in. to 100 feet. Once the three dimensions are set, volume of the concrete slab or wall can be read on the fourth scale, ½ to 100 cubic yards. The company makes concrete vibrators and screeds.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5088

SPEEDY AIR VISE

SPEEDS UP

- ✓ MILLING
- ✓ PUNCHING
- ✓ DRILLING
- ✓ BENDING
- ✓ TAPPING
- ✓ RIVETING

GRIPPING FORCE 15 TIMES AIR LINE PRESSURE

Speedy Air Vise helps you do dozens of operations faster, better, cheaper—by air pressure! Foot control valve opens and shuts vise instantly, leaving *both* hands free to produce more! Jaw opens up to 3 inches, holds castings, parts, jigs, etc. Compact and trouble-free.

Complete with Foot Control, Air Hose and Fittings.....only **$36.00**

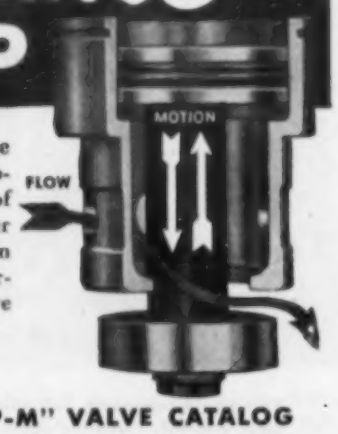
Prompt Delivery from Your Supplier or Write Direct

W. R. BROWN CORPORATION • 2645 N. Normandy Avenue, Chicago 35, Ill.

AIR REGULATORS • AIR FILTERS • AIR GUNS • PORTABLE COMPRESSORS

If you write maker identify as IEN - 5089

NO SPRINGS NEEDED



This removable cartridge contains the "piston poppet,"...only moving part of a Hannifin "P-M" Master Valve. This piston-driven poppet is pressure operated both ways. There are *no springs to fail!*

WRITE FOR OUR COMPLETE NEW "P-M" VALVE CATALOG

Find out how P-M Master Valves (pressure-operated) and Pilot-Master Valves (solenoid-controlled, pressure-operated) can all be serviced with a stock of just two sizes of these removable cartridges. 2-Way, 3-Way, 4-Way. Sizes: ⅜" to 1¼". Also, two complete series of ¼" direct-operated valves. Bulletin 232.

HANNIFIN

Hannifin Corporation, 1107 S. Kilbourn Ave., Chicago 24, Ill.

AIR AND HYDRAULIC CYLINDERS • PRESSES • AIR CONTROL VALVES

If you write maker identify as IEN - 5090

Easier, Faster!

for Electronic Work
Aircraft Connectors
Wire-to-Wire Terminals
All Small Work

Electrode pencil hardly bigger than a pencil pinpoints the heat — gets easily into small, tight spots. Instant resistance heating — no damage or burning of surrounding parts — no cold flow joints. Safe — electrode operates on 6V. from separate transformer. Electrode tips for all small jobs — also soldering iron tips.

SOLD THROUGH LEADING DISTRIBUTORS

Get Catalog Data

IDEAL INDUSTRIES, Inc.
1108 Park Avenue, Sycamore, Illinois
Please send catalog data on NEW IDEAL THERMO-TIP
NAME.....
COMPANY.....
ADDRESS.....
CITY..... ZONE..... STATE.....

If you write maker identify as IEN - 5091

SAVE on Cut-off Costs!

SHOWN—Model M equipped with bar feed

. . . with this FULLY Automatic Equipment!

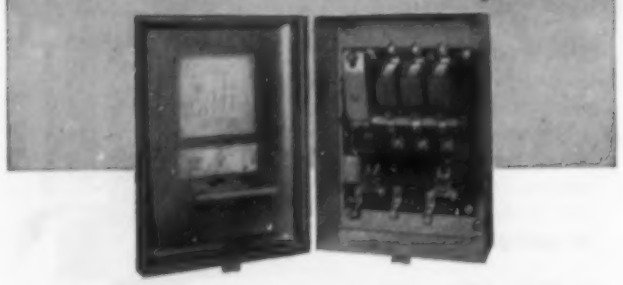
- Our Models M, D and J feature simplified hydraulic controls for both full and semi-automatic operation. Minimum maintenance, maximum blade life assured!
- Top results are yours on all jobs whether high speed or regular blades are used.
- Capacities range from 9" x 18" to 24" x 24".
- Also available: Model H hinge-type, economy model (9" x 16" capacity) and a complete range of accessories.
- Send today for literature on this line-up of superior metal cutting band saws.

W. F. WELLS & SONS
Three Rivers, Michigan

If you write maker identify as **IEN - 5092**

QUICK-QUENCHING *Extends Contact Life*

ALLIS-CHALMERS New Size 4 STARTER



This size 4 magnetic, full voltage starter features a 150-amp, 600-volt contactor utilizing a quick-quenching arc centering blowout . . . a new principle of arc interruption which minimizes destructive burning and pitting of contacts. Contactor is clapper-type with single break contacts. Melting alloy-type relays provide overload protection. Starter available in general and special purpose enclosures.

There is an Allis-Chalmers starter for every motor need. Contact your nearby A-C representative or write for selection guide 14B7733, Allis-Chalmers, Milwaukee 1, Wisconsin. A-4047

ALLIS-CHALMERS

If you write maker identify as **IEN - 5093**

CARING FOR WAXED FLOORS IS . . .

A cinch with Sanax

It waxes as it cleans!

REDUCES THE FREQUENCY OF REFINISHING

Sanax was developed to permit frequent cleaning of waxed floors *without washing away the finish* . . . and to eliminate waste in wax and labor. A neutral liquid soap with a wax base, *Sanax* not only quickly removes dirt, oil, and grease, but *leaves a thin film of wax*—a lustrous anti-skid protective finish. *Safe for all floors.* Highly concentrated . . . economical to use. For consultation, literature, or demonstration, phone or write nearest *Finnell Branch* or Finnell System, Inc., 2605 East St., Elkhart, Ind.

For machine-scrubbing or damp-mopping waxed floors

FINNELL SYSTEM, INC. *Originators of Power Scrubbing and Polishing Machines* — FINNELL — BRANCHES IN ALL PRINCIPAL CITIES

If you write maker identify as **IEN - 5094**

production all gummed up...?

...see what a difference **AVERY** Kum Kleen **LABELS** will make ...they're pressure-sensitive!

■ Self-adhesive Avery Labels are quick, clean and neat... there's no mess, no fuss, no sticky fingers. Combined with patented Avery dispensers, they'll speed and simplify your labeling—and production! They're laid right on your product—*without moistening.* They'll put your trade mark on that hard-to-label surface...put a warning sticker or wiring diagram on your product or any clean, smooth spot. For inspection stickers...color coding...guarantees—they'll really speed production, packaging or any labeling or marking job!

■ Available in sheets or rolls...in any size, shape or color. Write for case histories and FREE SAMPLES—*today!*

AVERY ADHESIVE LABEL CORP., custom div. 103
117 Liberty Street, New York 6 • 608 South Dearborn Street, Chicago 5
1616 S. California Ave., Monrovia, Calif. • Offices in other Principal Cities

☐ Send us case histories & free samples
☐ Tell us about your dispensers
☐ Have the Avery Label man call

Name _____
Company _____
Address _____
City _____ State _____

USEFUL INFORMATION
(Continued)

If you write maker identify as **IEN - 5095**

BRASS . . Report on machinability of free cutting brass and on that of leaded steel

Titan Metal Mfg. Co.
Dept. IEN, Bellefonte, Pa.

Laboratory and production tests are summarized in new 48-page "First Report" booklet on the machining characteristics of free-cutting brass and leaded steel. The laboratory tests included lathe and drilling-machine application. One production test compares work pieces produced in a 704-hour continuous operation on Conomatic machines.

If you write maker identify as **IEN - 5096**

V-BELT DRIVES . . Three slide films deal with V-belt design, selection, installation

Allis-Chalmers Mfg. Co.
909 S. 70th St., Dept. IEN, Milwaukee 14, Wis.

New set of 35-mm. sound slide films are on the subject of V-belt drives. Showing time is about 20 minutes each. "In Every V-Belt Drive" describes basic engineering principles. "Selecting a Drive" tells how to pick one to meet requirements. "For Better Driving" covers installation and maintenance.

If you write maker identify as **IEN - 5097**

GRINDING . . House publication article gives rules on grinding and polishing magnesium

Norton Company
36 New Bond St., Dept. IEN, Worcester 6, Mass.

"Grits and Grinds" in its Vol. 44 No. 12 issue carries an article on grinding magnesium-alloy castings. This article lists typical procedures, makes recommendations on grinding wheels, stresses safety precautions and dust collection.

If you write maker identify as **IEN - 5098**

HEATING . . Booklet of application ideas answers questions on induction and dielectric heating

New Rochelle Tool Corp.
320 Main St., Dept. IEN, New Rochelle, N. Y.

Sixteen-page "Thermatool" booklet tells what induction and dielectric heating are, how they are used, and answers six typical questions. A section on possible future applications describes one use of dielectric heating to kill weevils in foods.

If you write maker identify as **IEN - 5099**

MAGNETS . . House publication article suggests a variety of applications for permanent magnets

Indiana Steel Products Co.
Indiana Ave., Dept. IEN, Valparaiso, Ind.

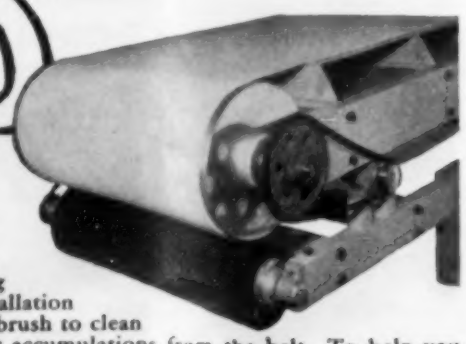
Summary on how permanent magnets can be used in a factory is provided by the major article in March issue of "Applied Magnetics". Some of the applications are as conveyors, visual layout aids, material pickup, hand tools, inspection, clamping. Your name will be added to the list on request.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 5100**

IDEA FOR PRACTICAL ACTION

FREE Fact Sheet Shows How to Mount FULLERGRIPT Power Brush for Conveyor Cleaning



Many users of conveyors are cutting operating costs by the installation of a Fullergript brush to clean dirt and product accumulations from the belt. To help you we have prepared a sheet with sketches showing how to hitch up and install different types of Fullergript power brushes. A copy will be sent upon request. Simply write to . . .

INDUSTRIAL *Fuller* BRUSH CO. **DIVISION**

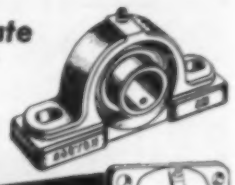
3583 MAIN STREET • HARTFORD 2, CONNECTICUT

Power driven brushes, Factory & Institutional cleaning tools, Waxes & Detergents

If you write maker identify as **IEN - 5101**

How cost-wise buyers rate

SHAFT SUPPORTS



GOOD BETTER ✓ **BOSTON** *Gear*

Bronze or Ball Bearing PILLOW BLOCKS FLANGED CARTRIDGES

IN STOCK AT 92 BOSTON *Gear* DISTRIBUTORS at Factory Prices

Look under "Gears" in the Yellow Classified Section of your Telephone Directory for the Distributor nearest you.

◀ Get this Catalog . . . lists 5112 standardized machine parts . . . your reliable "textbook" of drive design and maintenance. Ask your BOSTON Gear Distributor, or write request to Boston Gear Works, 63 Hayward St., Quincy 71, Mass.

If you write maker identify as **IEN - 5102**

It's all in the Heat Treatment

Tough heads eliminate spalling.

Special Hammers not required to make stamps safe.

Originators of Super Safe and Safaloy Stamps

WRITE FOR INFORMATION AND PRICES

We specialize in rugged stamps for steel mill use.

Our roll cutter tools outlast all others.

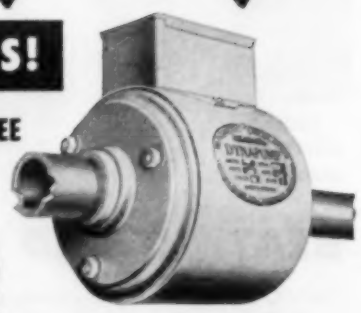
PITTSBURGH STENCIL & TOOL COMPANY
REEDSDALE and SCOTLAND STREETS
PITTSBURGH 12, PA.

If you write maker identify as **IEN - 5103**

Give your product these

Dynapump

ADVANTAGES!



- **MAINTENANCE FREE** *No lubrication*
- **LEAKPROOF** *No shaft seal or stuffing box*
- **EASILY INSTALLED** *Compact, light, may be mounted in any position*
- **CORROSION FREE** *Stainless steel*
- **LOW FIRST COST**

MAGNETIC fostoria PUMPS

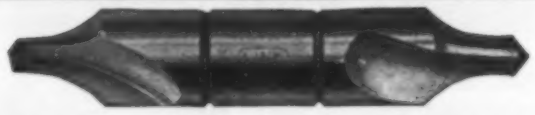
Ad No. 5404

The revolutionary DYNAPUMP is a magnetically driven fractional horsepower centrifugal pump that eliminates 90% of pump difficulties. It is suitable for pumping water, solvents, refrigerants, corrosive or hazardous fluids, beverages, etc. Write for descriptive folder.

THE FOSTORIA PRESSED STEEL CORP., Fostoria, Ohio
"Our 38th Year of Quality Products" Dept. 507

If you write maker identify as **IEN - 5104**

FAR LESS TIP BREAKAGE with "RING SEAT" CENTER DRILLS



USE "RING SEAT"

CENTER DRILLS

IF YOU GRIND BETWEEN CENTERS

The "R" type, curved contour Ring Seat center drills give you a stable, accurate, precision center, quickly restored after heat-treat.

Ring Seat center drills produce a protected center at no extra cost—and carry a built-in discount because they last longer.

Lapping After Heat Treat

is a simple quick operation since only about one-third the usual area needs clean-up. Lapping with a rotating felt wick removes heat scale and restores a perfect center — at the original place.

A PREMIUM DRILL AT NO EXTRA COST

LINK INDUSTRIES

13848 Elmira Detroit 27, Mich. FREE CIRCULAR

If you write maker identify as **IEN - 5105**

Evans King-Size 10-ft. Steel Tape

STANDS UP STRAIGHT for UPRIGHT MEASUREMENTS

Those long upright measurements are easy and accurate with this new EVANS King-Size 10-ft. White-Tape. The 33% wider blade (full ¾") stays straight up without bending or buckling. You get a *free* belt clip and Tenite utility case with every tape. Sliding end hook for inside or outside measuring and . . .

it's marked so you don't have to figure! no other tape is marked this Evans way.

This Edge—marked in feet and inches with foot markings at every inch

This Edge—marked in inches from 1" to 120"

Whichever way you work, in inches or feet and inches, you read *instantly* without having to stop and figure.

The EVANS King-Size White-Tape Is the Top 10-ft. Tape Value at only $2.32* *Purchase from your supplier*

another **EVANS** value—

THE ONLY 12-FOOT POCKET WHITE-TAPE

Standard blade ½" wide

This L-O-N-G-E-R Pocket White-Tape only $1.89*

Purchase from your supplier

Now, a pocket steel tape that measures a full 12 feet — eliminates the inconvenience and inaccuracy of adding two measurements as you do with shorter tapes. Exclusive EVANS double markings (same as King-Size above). Chrome plated case is *no bigger than cases for shorter tapes.* Self-adjusting sliding hook for 100% accurate inside or outside measurements. Each tape packed in FREE transparent Tenite utility case.

**Prices slightly higher Denver West*

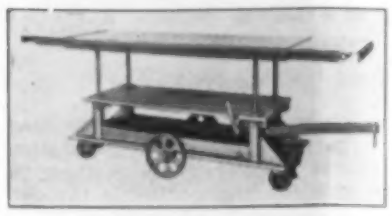
Evans & CO.

400 Trumbull Street, Elizabeth, N. J., U. S. A.

If you write maker identify as **IEN - 5107**

ELEVATOR . . Portable lift table rates 2½ ton for sheet and strip

Source: HAMILTON TOOL CO.
905 Hanover St., Dept. IEN, Hamilton, Ohio



Four point support

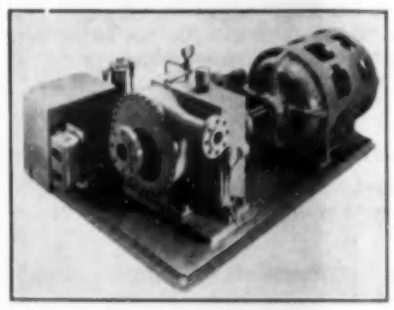
Center support, to turn in its own length, is provided by a pair of wheels under the base of this new unit in the Portelvator line. Casters are mounted at the four corners for stability. Floor locks complete the base assembly. The table top can be raised and lowered through 14 in. from a minimum of 24 in. above floor level by turning a crank. This crank operates a chain and sprockets on the four supporting jack screws between the table and the base.

The table top measures 26 in. in width by 72 in. in length. It can be extended to 108 in. by raising the drop leaves at the two ends and pulling out support bars that retract into the main table section. Bearings are equipped with pressure grease fittings. A tow bar is included to move the assembly from one location to another.

If you write maker identify as **IEN - 5108**

COMPRESSOR . . Centrifugal design for recycling, to 600 lb., 700 deg. F.

Source: SAWYER BAILEY CORP.
1559 Niagara St., Dept. IEN, Buffalo 13, N. Y.



Brochure on request

New compressor is available in a range of power ratings from 25 to 250 hp. for flow starting at 100 cfm. and for pressure to 600 lb. with temperature to 700 deg. F. The compressor takes flow from a high pressure line, steps this pressure up further and delivers it through its outlet connection.

Construction includes standardization of impellers, housings, diffusers, bearings, gears and shafts. The impeller is designed for service in a range between 50 per cent below and 20 per cent above design flow. It is non-overloading type and non-surging in operation.

If you write maker identify as **IEN - 5109**

Telvar-W trade names a wettable powder to be mixed with water and applied with a sprinkling can or a hand or power sprayer on areas from which it is desired to exterminate weeds. Application can be made at any time when there will be sufficient rainfall to carry the chemical down to the weed roots. Care should be used to keep the chemical away from the vicinity of valuable trees or other plants or areas into which their roots may extend. A bulletin illustrating the action is available from E. I. du Pont de Nemours & Co., 2518 Nemours Bldg., Dept. IEN, Wilmington 98, Del.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 5110**

DIAMOND DRESSING TOOLS ARE VALUABLE—INCREASE THEIR LIFE WITH

DIAMOND-MISER

Hydraulically operated, completely automatic diamond tool index.

Wheel Trueing Hydraulic Diamond-Miser operates from hydraulic system of machine; provides precise diamond indexing and hydraulic accuracy of operation. Greatly extends diamond life by eliminating common causes of diamond spoilage and waste. Available for centerless, cam, crank and universal grinders, single or multiple wheel mounts.

Send for Informative Book and Price List.

WHEEL TRUEING TOOL COMPANY

46-3200 West Davison Avenue Detroit 38, Michigan

If you write maker identify as **IEN - 5111**

New MERCURY "BANTY" GAS TRACTOR

Available in Two Capacities: 2300 and 3000 lbs. DBP.

Model 460

Over 41 years experience in the manufacturing, designing, and installation of material handling equipment.

MERCURY

Here it is...the completely new MERCURY "Banty." A small, rugged 4 wheel gasoline tractor with a turning radius of only 62". Features new double reduction drive axle with demountable wheel rim and tire assemblies... self-energizing hydraulic brakes ...new semi-elliptic spring suspension, front and rear...cushion or pneumatic tires.

For complete information write!

MERCURY MANUFACTURING COMPANY

4132 S. Halsted St., Chicago

If you write maker identify as **IEN - 5112**

SPRACO NOZZLES

Write for NOZZLE CATALOG *to*

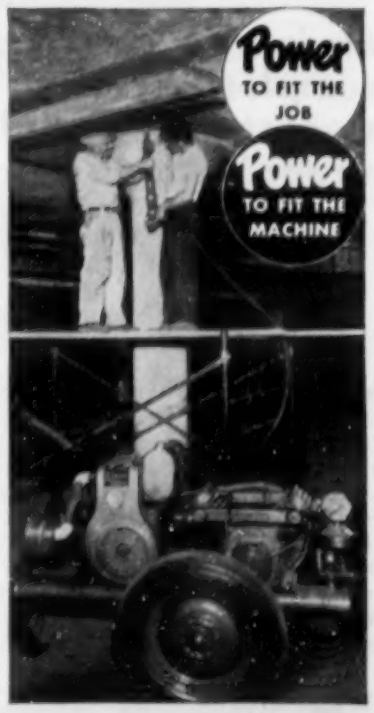
SPRAY ENGINEERING CO.

110 CENTRAL STREET • SOMERVILLE 45, MASS.

If you write maker identify as **IEN - 5113**

WISCONSIN-POWERED

Ingersoll-Rand Compressor Goes to Work on Plant Alterations . . .



Dependable Engine Power is a vital consideration in the operation of air compressors for industrial service, such as illustrated here, as well as for a broad variety of original equipment applications in many lines. Because of their heavy-duty engineered design and construction, Wisconsin Air-Cooled Engines have the built-in *Lugging Power* that *fits the job and stays with it* . . . plus compactness and light weight to *fit the machine.*

And because Wisconsin Air-Cooled Engines enjoy acceptance and reputability to match the finest equipment, they are more extensively specified as standard power components than any other engines within a 3 to 36 hp. range. You can't do better than to specify "WISCONSIN" for your equipment.

WISCONSIN MOTOR CORPORATION

World's Largest Builders of Heavy-Duty Air-Cooled Engines

MILWAUKEE 46, WISCONSIN

If you write maker identify as **IEN - 5114**

MAINTENANCE CONTROL *Simplified*

NEW Illustrated Bulletin on request

Step-by-step procedure providing positive control
. . . with little clerical work

. . . Maintenance Request and/or Maintenance Order . . . for all maintenance jobs . . . Preventive maintenance, repairs, new work.

. . . Maintenance Supervisor's Order Control . . . progress or follow-up records . . . information for maintenance reports, etc.

. . . Scheduling and Job Assignment . . . assignment and instructions to Craft chiefs and foremen . . . by Craft chiefs and foremen to workers and crews.

. . . Job Costs, daily and final.
. . . Material Control.
. . . Tool Crib Control.

McCaskey procedures illustrated and described in this NEW folder are readily adaptable to your individual requirements

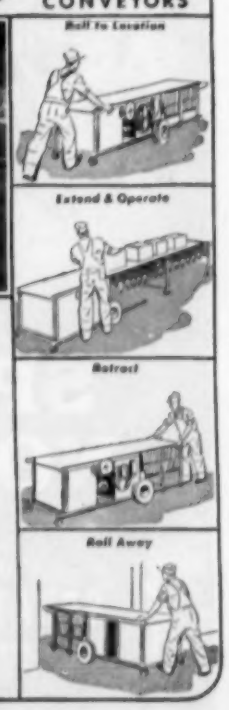
WRITE TODAY FOR YOUR COPY A-699 IEN

McCaskey INDUSTRIAL CONTROLS
PRODUCTION · INVENTORY · TOOLS · COSTS · MAINTENANCE
THE McCASKEY REGISTER DIV.,
Victor Adding Machine Co.
ALLIANCE, OHIO
Galt, Canada Watford, England

If you write maker identify as **IEN - 5115**

MODERN TIME AND COST SAVERS BUILT BY... Standard

GRAVITY & POWER CONVEYORS



SAVE TIME LOADING — UNLOADING WITH THE

E-X-T-E-N-D-O-V-E-Y-O-R

This compact, mobile, easily maneuverable power-belt conveyor unit extends to 46 ft. in either direction and retracts to 9 ft. 10 in. Reaches into cars, trucks, trailers. Handles boxes, bags, bundles, cartons, crates, cases weighing up to 150 lbs. Available in two models — 1 way stretch and 2 way stretch — and 4 sizes. Write for Extendoveyor Bulletin— Dept. IEN-84.

STANDARD CONVEYOR COMPANY
General Offices: North St. Paul 9, Minn.
Sales and Service in Principal Cities

If you write maker identify as **IEN - 5116**

NEW STRAPPING TAPE

Brainard now offers complete service— steel strapping and strapping tape

● The Brainard Strapping System, comprising a complete line of steel strapping, tools, and accessories, has now been expanded to include strapping tapes, both pressure-sensitive and gummed, and dispensers for all applications. The tapes are filament-reinforced to provide high tensile strength, and are designed for strapping applications. Brainard is the first company to offer both strapping methods. Brainard can give you unbiased recommendations on the best method for your applications. Most shipping departments and packaging lines can use both steel strapping and strapping tape to advantage.

Brainard
STEEL DIVISION
SHARON STEEL CORPORATION

For booklet write
BRAINARD STEEL DIVISION
Dept. II-5, Griswold Street
Warren, Ohio

USEFUL INFORMATION
(Continued)

If you write maker identify as **IEN - 5117**

MANAGEMENT . . Sound color film describes operations of a machine and tool maker

Brown & Sharpe Mfg. Co.
235 Promenade St., Dept. IEN, Providence 1, R. I.

Precision and human endeavor required to build machine tools and small tools are described in new 16-mm. motion picture, "Meet Brown & Sharpe". Showing time is about 20 minutes. The film is available for group showing through the company's main office or through its field offices.

If you write maker identify as **IEN - 5118**

MANAGEMENT . . Leasing of equipment described in report which summarizes current study

Council for Technological Advancement
120 S. La Salle St., Dept. IEN, Chicago 3, Ill.

CTA No. 21 is a 28-page publication on practical considerations in leasing industrial equipment, analysis of terms and conditions in lease agreements, financing, legal and tax problems, the lease and anti-trust law. It is issued by the Council, a part of Machinery and Allied Products Institute.

If you write maker identify as **IEN - 5119**

MANAGEMENT . . What one company is doing to protect health of its employees and the public

E. I. Du Pont de Nemours & Co.
2518 Nemours Bldg., Dept. IEN, Wilmington 98, Del.

Picture book, "Protecting the Public Health", is the latest in the company's "This Is Du Pont" series. It tells how new developments are tested to see that they do not bring new troubles, how both employees and customers are protected by research and testing, how job safety is promoted.

If you write maker identify as **IEN - 5120**

MANAGEMENT . . Standard time data for machine shop operations in 488-page textbook

Ronald Press Co.
15 E. 26th St., Dept. IEN, New York 10, N. Y.

Tables of data for establishing machine-shop time values are presented in new "Handbook of Standard Time Data" by Hadden and Genger, list price $10. It covers basic cutting speeds, handling elements and allowances, specific figures for lathe, milling, drilling, grinding, broaching, boring, punching, welding, assembling.

If you write maker identify as **IEN - 5121**

MANUFACTURING . . Textbook on methods and materials for making electromechanical products

John Wiley & Sons Inc.
440 Fourth Ave., Dept. IEN, New York 16, N. Y.

"Materials and Processes" in its new Second Edition has been expanded about 50 per cent into a 1,088-page book that lists at $8.50. Author is James F. Young. Part One deals with metals, alloys, properties of metals, non-metallic materials. Part Two describes casting, powder metallurgy, heat treating, welding, machining, plating, inspection, testing. The book is one of a series for General Electric's educational programs.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 5122**

PREVENT BURNS!

SWIVELIER *Adjustable*
COOLITES
STAY COOL
Using 100-Watt Lamp

"NEVER GETS TOO HOT TO HANDLE"

FOR USE ON:
- lathes
- millers
- drill presses
- other machine tools
- assembly benches
- inspection tables
- desks
- drafting boards
- business machines

● ALL WIRES ENCLOSED

UNIVERSALLY ADJUSTABLE

● For full details on Coolites, fluorescent and incandescent "Dextra-Lites" and other fine Swivelier Industrial Lighting Units
Write: Dept. IE5 for Bulletin 134.

SWIVELIER COMPANY, Inc.
43—34th St., Brooklyn 32, N. Y.
Showroom: 30 Irving Place, New York, N. Y.

If you write maker identify as **IEN - 5123**

PLASTIC MOLDERS . . . Remove One Variable From Your Process

Feed exact quantity whether you starve feed or feed with a cushion. An EXACT WEIGHT Automatic Net Weighing Machine on your injection molder makes possible precise weighing of every charge. EXACT WEIGHT Weigh-Feeders are backed by 40 years of specialized experience in precision industrial scales and offer you these important advantages:

- **Precision EXACT WEIGHT Industrial Scale**
- **Visual Weight Indication of EVERY Charge**
- **Rapid, Easy Changeover and Adjustment**

VISIT US IN BOOTH 749 AT THE PLASTICS SHOW

Exact Weight Scales
Better quality control
Better cost control

THE EXACT WEIGHT SCALE COMPANY
932 W. Fifth Avenue, Columbus 8, Ohio
2920 Bloor St. W., Toronto 18, Canada

If you write maker identify as **IEN - 5124**

Hardness Readings in 2 seconds!

Webster
PORTABLE
Hardness Testers
FOR NON-FERROUS METALS

TWO LOW-COST MODELS differing in sensitivity for rapidly testing hardness of aluminum, brass, copper, etc. No training required; one hand operation. Hardness readings in 2 seconds anywhere in shop. Can be correlated to standard hardness scales. Quick reading dial. Special anvil design tests all shapes: sheets, extrusions, tubing, strip stock. Capacity ¼". Simple, rugged design, easy maintenance.

MODEL B Direct hardness readings on all aluminum alloys.

MODEL B-75 Direct hardness readings on copper, brass, etc.

Other models available

WEBSTER INSTRUMENT INC. Dept. N, 11856 Mississippi Ave. Los Angeles 25, California

If you write maker identify as **IEN - 5125**

DOES YOUR PRODUCT REQUIRE

V-BELT PULLEYS?

Why pay die or tool costs to manufacture your own when Nagel-Chase can supply them at low cost. These Nagel-Chase V-Belt Pulleys are of pressed steel welded construction with solid steel hubs—light weight, strong, precision-built and ideal for all light duty, fractional horse power drives. They are available in a wide range of sizes from 2 5/16" O.D. to 14" O.D. Write today for complete information—we will be glad to consult with you on your requirements.

NAGEL CHASE MFG. COMPANY
2811 N. Ashland Avenue, Chicago 13, Illinois
MANUFACTURERS OF PRECISION-BUILT CASTERS AND PULLEYS FOR OVER A QUARTER CENTURY.

If you write maker identify as IEN - 5126

The Quick, Easy, Handy Way to TAP BY HAND

. . . Adapts for LATHE USE

THE DAHLSTROM TAP GUIDE virtually eliminates tap breakage—and saves those costly hours spent prying broken taps out of dies. Anyone can use it. Just a few turns of the spindle and the job is done.

Winds through continuously, with no backoff. Work is always dependably straight and square. Fasten it to a post or set it on top of a big job. This handy tapper comes equipped with 9 adapters, 8-32 to ⅜" but taps are not furnished. Spindle can be pulled out and used in a lathe, or used as tap extension for hard-to-get-at-places. 13" x 8" x 14", wt. 32 lbs. $59.50 F.O.B. factory.

Send for bulletin!

Also Makers of Dahlstrom Autostrop and Tap Chuck

BRANCH MFG. CO.
NORTH BRANCH, MINN.

59.50 F.O.B. FACTORY

Dahlstrom **TAP GUIDE**

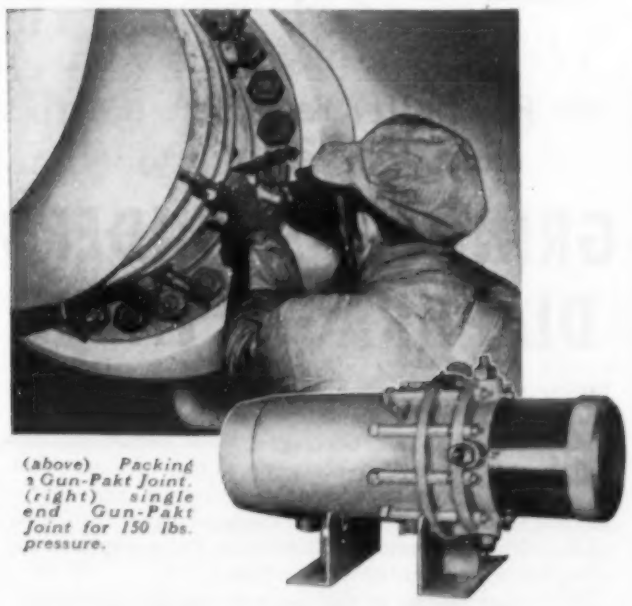
If you write maker identify as IEN - 5127

AVOID SHUTDOWNS! USE EXPANSION JOINTS PACKED UNDER FULL STEAM PRESSURE

Production schedules can be ruined by repair and service shutdowns on steam distribution lines. Avoid shutdowns by using the slip-type expansion joints that can be packed under full steam pressure—Yarway Gun-Pakt Expansion Joints.

You simply insert a piece of Yarway plastic packing, twist a wrench, and the joint is tight...the job done.

Other Yarway Gun-Pakt advantages—(1) strong, rugged construction with less chance of major shutdowns, (2) fewer joints needed per length of pipeline because of longer sleeve traverses, (3) lower year-in-year-out maintenance costs.



(above) Packing a Gun-Pakt Joint. (right) single end Gun-Pakt Joint for 150 lbs. pressure.

Public utilities, industrial plants and institutions find Gun-Pakt one of the greatest expansion joint advancements in recent years. See how Gun-Pakt joints will fit into your steam lines. Write for Yarway Expansion Joint Bulletin EJ-1912.

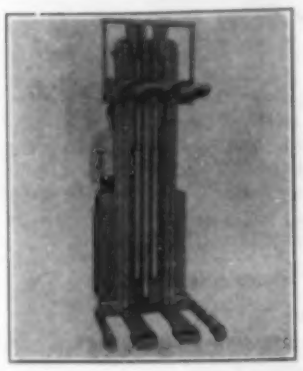
YARNALL-WARING COMPANY
122 Mermaid Avenue, Philadelphia 18, Pa.

YARWAY | ***gun-pakt expansion joints***

If you write maker identify as IEN - 5129

TRUCK . . Electric fork lift, stable at fork heights to 158 inches

Source: RAYMOND CORPORATION
35-120 Madison St., Dept. IEN, Greene, N. Y.



For narrow aisles

Two of four base legs on this new truck carry 5 by 2-in. load wheels and straddle a pallet. The other two legs enter beneath the pallet and are equipped with dual 5 by 2 in. wheels. The elevating forks measure 7 in. in width. They lower over the inner base legs so they can be run in with the truck to pick up a pallet and raise it to the maximum height capacity of 158 inches. The truck can right-angle stack pallet loads from aisles measuring 6 ft. in width. It has been designed for use with skids, open-face or four-way-entry block type pallets.

If you write maker identify as IEN - 5130

HARD FACING . . Arc electrode, particularly for manganese steel

Source: ALLOY RODS COMPANY
5141 W. Market St., Dept. IEN, York, Pa.

Technical data upon request

Wear-Arc Super WH is a new hard facing arc electrode. It is low in carbon content to prevent spalling and flaking of the weld deposit under operating conditions involving severe impact. It shows abrasion resistance several times that of manganese steel. It is suited for strength welds as well as for hard facing on this type of steel.

If you write maker identify as IEN - 5131

FIRST AID . . Emergency blanket in metal canister for wall mounting

Source: INDUSTRIAL PRODUCTS CO.
2801 N. 4th St., Dept. IEN, Philadelphia 33, Pa.

List price is $15.40

Wool blanket, measuring 62 by 82 in. and dark gray in color, is held in a metal canister measuring 8½ in. in diameter by 20 in. in height. The canister is finished in red enamel for visibility. It is equipped with brackets to hang on a wall, for removal as a complete unit, or to permit removing the blanket quickly in the event of an emergency. The blanket can be used to cover and protect a worker who has been injured. It will extinguish flame in a worker's clothing.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5132

Great Motors from Great Britain!

Newman Totally Enclosed Fan Cooled Squirrel Cage Motors

- **world-famous NEWMAN MOTORS**
- **net savings up to 40%**
- **immediate delivery**
- **unconditionally guaranteed**
- **superior design—to N.E.M.A. standards**
- **offices in principal cities**

For the first time, the complete world-famous line (2 million installed in 62 countries since 1935) of NEWMAN MOTORS, built to N.E.M.A. standards, is offered to the American Market in sizes up to 230 H.P.

These are new, high-quality motors equipped with the prestige of a great motor making company. Vast savings, dependability, unconditional guarantee are offered to American buyers.

Any motor sent free and without obligation for examination and testing. Factory stocks at New York, Chicago, Savannah, Houston, Portland, San Francisco and Los Angeles.

Write for a catalog and price list to-day

Newman INDUSTRIES (AMERICA) INC.

If you write maker identify as IEN - 5133

Edmont Case No. 347: Plating small pieces (bolts, nuts, fixtures, wrenches) unlined rubber gloves lasted 5 shifts, job-fitted coated gloves 13 shifts.

Edmont Case No. 211: Handling ½" rope soaked in zinc cyanide, in plating dept. Previous gloves lasted 1 shift, job-fitted coated gloves 8 shifts.

Edmont Case No. 306: Ordinary neoprene gloves used in glass company's lye room lasted 2 shifts; job-fitted NEOX coated gloves 14 shifts.

Job-fitted gloves wear longer in acids, caustics, solvents

Cost savings averaging 40% to 70%, as well as reductions in lost-time accidents, result when old-type work gloves are replaced with modern coated gloves which fit the job condition. Tell us your operation. Without charge, we will send samples of recommended gloves for testing.

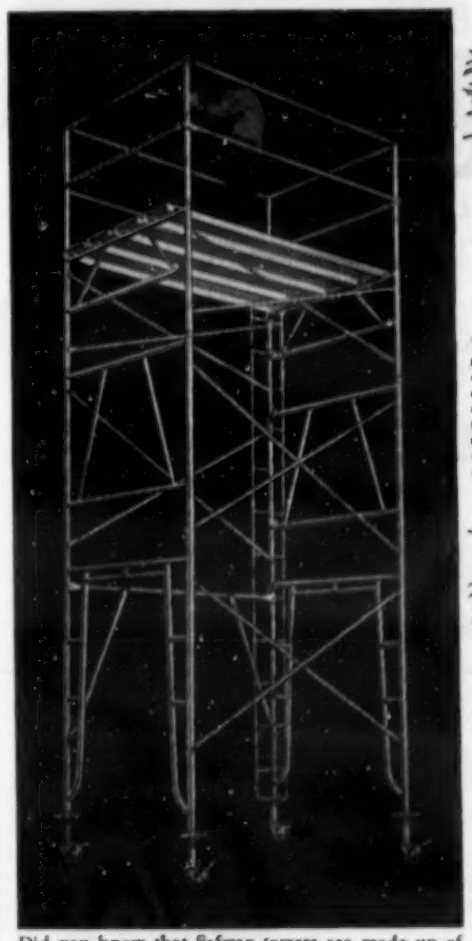
Edmont JOB-FITTED GLOVES

Edmont Manufacturing Co.
1226 Walnut St., Coshocton, Ohio

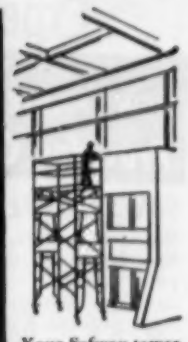
Leading industrial distributors carry Edmont gloves in stock

If you write maker identify as IEN - 5134

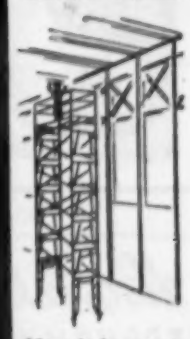
ROLLING TOWERS PUT SKILLED HANDS TO WORK EFFECTIVELY



Did you know that Safway towers are made up of standard, interchangeable parts? It is easy to make up your tower to any convenient size.



Your Safway tower simplifies the lubrication of high machines, presses and cranes and speeds the servicing of overhead motors, unit heaters and conveyor systems.



Now it is easy to work on ceiling level ducts for electric cables and buses, on steam and water pipes and line shafts.

CONSIDER THE TIME AND PROFIT you gain by SAFELY putting your skilled workers close to the job they're doing. The Safway rolling tower does just that. On maintenance and repair jobs, for example, it follows the work . . . along building walls, down corridors. It will help you put your skilled hands to work more profitably for you.

Your Safway rolling tower fits your job requirements to a "T." Not only are platforms adjustable to convenient working heights, but parts are standard and interchangeable. And your tower locks in position firmly with brakes on both wheels and swivel. The platform provides a generous working area and is protected by a sturdy guard rail.

For more facts contact one of the 137 Safway distributors near you. Or write direct for free bulletin.

SAFWAY STEEL PRODUCTS INCORPORATED
6228, West State St.
MILWAUKEE 13, WIS.

Manufacturers of Tubular Steel Scaffolding and Equipment

If you write maker identify as **IEN - 5136**

NOLAN ONE-MAN CAR DOOR OPENER

Opens Doors in 20 seconds or less!

The Nolan Car Door Opener gives one man a tremendous amount of pulling energy, to get the most stubborn, hard-rolling door wide open in a hurry! New chain has 2000 lbs. tensile strength.

No gangs needed. No mangled limbs or loss of life. A few quick pulls on anchor chain gets any door open in a jiffy. The NOLAN saves its low initial cost in first hour of operation.

New safety features make the Nolan 1-Man Car Door Opener a more necessary labor-saving, money-saving help than ever before.

MANY THOUSANDS IN CONSTANT DAILY USE! FREE LITERATURE.

Order one or more NOLAN Model-H Car Door Openers now. Catalog on request.

$37.50 F.O.B. Bowerston

THE NOLAN COMPANY • 114-C Pennsylvania St., Bowerston, Ohio

If you write maker identify as **IEN - 5137**

SAVE 85% Of Needless Washroom Expense

NEW, FASTER DRYING *Sani-Dri*
Provides CLEAN, SANITARY SERVICE

SAVES TOWEL COSTS . . . SAVES MAINTENANCE

Save up to 85% of washroom costs with new, faster drying Sani-Dri hand and hair dryers. No buying and storing of paper towels . . . no monthly service fee for cloth towels. Sani-Dri reduces maintenance overhead and provides 24-hour, automatic drying with no clutter . . . no towel waste . . . no fire hazard. All models carry Underwriters seal and 2 year guarantee.

Only Sani-Dri—The Original Electric Dryer Offers So Many Exclusive Features!

WRITE TODAY FOR NEW ILLUSTRATED FOLDER SHOWING COMPLETE LINE

Manufactured and Guaranteed By
THE CHICAGO HARDWARE FOUNDRY CO.
"Dependable Since 1897"
3464 Commonwealth Ave. No. Chicago, Ill.

If you write maker identify as **IEN - 5138**

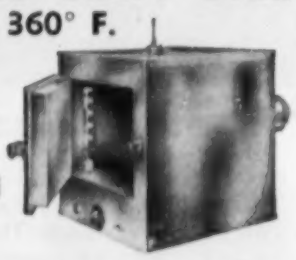
Hotpack INDUSTRIAL ECONOMY FORCED DRAFT OVEN

Operates 95°F. to 360° F.

SPECIFY *Hotpack*

HIGH TEMP. BATHS for Tempering Metal Cleaning
•
ELECTRIC FURNACES
•
OVENS 12 to 250 cu. ft.
•
TEST ROOMS
•
STERILIZERS
•
STILLS

SAVES SPACE and DRYING TIME



Use it for checking Heat Indicator bulbs for calibration, thermostats, for opening and closing temperature ignition coils and distributor rotors, for breakdown at operating temperature and pistons for thermal coefficient of expansion.

- Interior size 13½" x 11" x 11"
- Hydraulic type thermostat sealed against dirt and moisture
- 2" thick glass wool insulation
- Heavy duty ¼ H.P. direct drive motor
- For operation on 110 V-60-AC 1100 Watts

F.O.B. Phila. **$197.50**

Send for Complete information

THE ELECTRIC *Hotpack* COMPANY, Inc.
5049 COTTMAN STREET, PHILADELPHIA 35, PA.

USEFUL INFORMATION
(Continued)

If you write maker identify as **IEN - 5139**

MILLING . . Slide selector reads speeds and feeds for milling operations

Clarkson Incorporated
320 Ontario St., Dept. IEN, Toledo 2, Ohio

Cutter diameter is set at a window in the face of new "Milling Slide Rule". Speed in rpm. and feed in ipm. then can be read at other windows against the material being cut, such as steels, cast iron, brass, phosphor bronze, aluminum. The information applies to Autolock end mills and Dedlock cutters.

If you write maker identify as **IEN - 5140**

MILLING . . Information booklet on milling cutter selection, use and maintenance

National Twist Drill & Tool Co.
Dept. IEN, Rochester, Mich.

"Milling Cutters", a 40-page report prepared by the Metal Cutting Tool Institute, is made available on request by the company. The booklet describes types of milling cutters, tool materials, design, influence of work materials, machine tools and fixtures, speeds and feeds, coolants. There is a section on sharpening and care of cutters.

If you write maker identify as **IEN - 5141**

MIXING . . Cardboard selector for air-powered agitator by size of batch

Eclipse Air Brush Co.
390 Park Ave., Dept. IEN, Newark 7, N. J.

Capaci-Dial is new circular cardboard selector for the company's Pneumix propeller-type agitator for liquids. First you turn the dial to batch size from 5 to 2,400 gal., using the desired setting for slow, medium or rapid agitation. Then you can read at one of four windows the recommended unit for thin, medium, heavy or thick consistencies of liquid.

If you write maker identify as **IEN - 5142**

MOTORS . . Comparison chart on new NEMA frame sizes for electric motors

Reliance Electric & Engineering Co.
1088 Ivanhoe Road, Dept. IEN, Cleveland 10, Ohio

Compar-A-Frame is a cardboard chart punched to fit standard loose-leaf binders. It is intended to show at a glance the comparative dimensions of open and fan-cooled ac. motors from ½ to 40 hp., both previous and new NEMA frame sizes. These are the company's Series-C and new Series-D.

If you write maker identify as **IEN - 5143**

PIPE FITTINGS . . House publication issue reviews ratings and standards on pressure piping

Taylor Forge & Pipe Works
Box 485, Dept. IEN, Chicago 90, Ill.

"Taylor Forge" in its Vol. 1 No. 2 issue carries a number of articles in its 44 pages on pressure-temperature ratings for steel pipe flanges and flanged fittings. It also publishes a report on expansion and flexibility in pressure piping, and a review of recent technical literature. Your name will be added to the mailing list upon request.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 5144**

A PAID NEWS ADVERTISEMENT BY CARBORUNDUM CO.

FAST NEW POLISHING TOOL

Expanding slotted rubber wheel uses inexpensive abrasive belts, sleeves

Low-cost polishing and finishing with abrasive belts, sleeves and bands by CARBORUNDUM is now possible . . . using a newly-developed Expanding Slotted Rubber Wheel which holds the abrasive element in place by centrifugal force alone. Slots in the resilient rubber face allow expansion of the wheel head at the recommended operating speeds, and the force of the expansion is sufficient to hold the belt, sleeve or band firmly while grinding. On many operations, this new wheel can replace set-up wheels . . . completely eliminating the long and costly preparation of the latter. Another advantage of the Expanding Wheel is the ease with which you can reverse the abrasive element whenever polishing or finishing must be done with one side of the wheel. Stopping the wheel loosens the abrasive . . . no mechanical device is used. Starting the wheel tightens it in place. Every bit of the abrasive can be used. There is no tendency for the sleeve, belt or band to "walk" sideways on the wheel as long as recommended wheel speeds are followed. Expanding Slotted Rubber Wheels are available in diameters from 1" through 8", in various widths up to 8" (widths normally do not exceed diameters). Write for complete information to **The Carborundum Company,** Dept. IEN 82-410, Niagara Falls, New York. Or use the inquiry form provided by this publication.

"Carborundum" is a registered trademark of The Carborundum Company, Niagara Falls, New York

If you write maker identify as **IEN - 5145**

REEVES *Fractional HP Vari-Speed Motodrive with* **10:1** *speed range. Completely new design! Check all these Reeves extras!*

1. Speeds from 3 to 4660 rpm.* Speed ranges to 10:1.
2. New "all-position" 14-turn handwheel control.
3. New "full-vision," sealed speedial indicator.
4. New horizontal or vertical down output shaft.
5. New spiral groove lubrication.
6. 112 different assemblies to choose from.

Send today for complete details and new catalog. Specify IN8-M543

REEVES PULLEY COMPANY • COLUMBUS, INDIANA

If you write maker identify as **IEN - 5146**

For better results, use the versatile

GRINNELL-SAUNDERS DIAPHRAGM VALVE

Piping in today's complex industrial plants is an exacting science involving the handling of highly corrosive fluids, gases, compressed air, beverages, foods and suspended solids . . . in lines where corrosion, abrasion, contamination, clogging, leakage and maintenance are costly factors. Under such conditions, the amazing performance of the Grinnell-Saunders Diaphragm Valve explains its acceptance by industry after industry.

The basic design of the valve is one big advantage. Working parts are completely isolated from the fluid stream which, in the case of corrosive acids, means longer valve life. Then, there is the matter of economy. With Grinnell-Saunders Diaphragm Valves, it is usually possible to go to less expensive body materials, to which special body linings can be added. Replacement and maintenance expenses, moreover, are greatly reduced. No wonder industry after industry is "Saying Yes" to Grinnell-Saunders Diaphragm Valves. Write for catalog.

GRINNELL
WHENEVER PIPING IS INVOLVED

Grinnell Company, Inc., Executive Offices, Providence, R. I.
Sales Offices and Warehouses in Principal Cities

If you write maker identify as **IEN - 5148**

EXTRA PROTECTION AT THESE TWO SPOTS

CUFFS UP
Here's control of injurious liquids — keep arms and inside of gloves dry.

CUFFS DOWN
Extra margin of safety — a two-inch longer gauntlet for really plunging in.

PATENTED
SURETY TURN-CUFF INDUSTRIAL GLOVES

Surety Turn-Cuffs are available in a wide range of natural and synthetic rubber types created for specific jobs for long wearing life. As a positive protection against dermatitis and allergies created by injurious liquids you'll find a Turn-Cuff style to meet your needs as recommended by so many safety directors and insurance companies. But even just for wearing qualities you'll find Turn-Cuffs the superior glove. From your Jobber or write direct.

In Canada, Safety Supply Co., Toronto

THE SURETY RUBBER CO.
CARROLLTON, OHIO

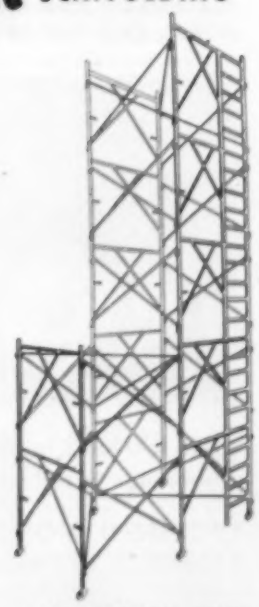
If you write maker identify as **IEN - 5149**

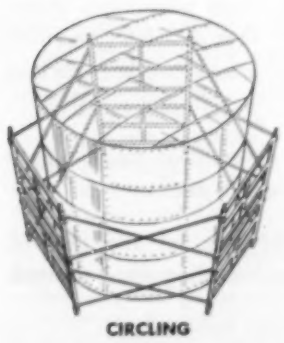
Overhead Work's *Not just 'UP'*

When you have to go *around* a job or *get inside* a curved structure, buy Universal Ezebilt—*the one scaffold* you can use on most every job. For example, Ezebilt's exclusive Gravity-Lock brace mechanism lets you "swivel" standard panels to "circle" curved surfaces, or to "rack-down" safely in narrow passages. And you don't need to fuss with nuts and bolts or loose parts — Ezebilt's rustproof Gravity-Lock helps you to put your scaffold up and take it down in much less time — handle jobs easier and faster because there are '*no bolts to master.*'

UNIVERSAL Ezebilt SCAFFOLDING

Write for New Catalog
Shows how to "custom-build" work platforms to any size or shape with standard Universal Ezebilt Scaffolding.





CIRCLING — SAFETY ROLLING TOWER

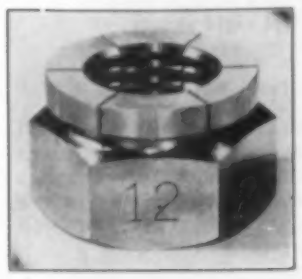
Distributors offer fast help and service. See your phone directory.

UNIVERSAL MANUFACTURING CORP.
ZELIENOPLE 5, PA.

If you write maker identify as **IEN - 5151**

FASTENING . . Stainless steel nut, locking design to use in hot locations

Source: STANDARD PRESSED STEEL CO.
Box 732, Dept. IEN, Jenkintown, Pa.



Can be re-used

SPS Series 99F12 is a new stainless steel Flexloc lock nut for application in temperatures to 1,200 deg. F. The nut is silver plated to prevent galling and seizure of the threads. It retains its locking strength at the elevated temperature and conforms to Military Specification MIL-N-7873. Seven sizes range from No. 10 to 9/16 inch. The threads are National Fine Series.

The one-piece construction employs a slotted top, or locking section, divided into six equal segments. They are closed in to make the inside diameter of the locking collar smaller than the outside diameter of the companion bolt. As the bolt is applied, the nut pushes the segments back. The resulting spring action holds the nut in place.

If you write maker identify as **IEN - 5152**

LATHE TOOLS . . Steel holder takes interchangeable shaped cutters

Source: BOKUM TOOL CO.
14775 Wildemere Ave., Dept. IEN, Detroit 38, Mich.

The Rapidor Tool

Four types of high speed steel or carbide tipped cutter are supplied for roughing, semi-finishing, finishing and forming in this new combination of alloy steel holder and cutting head. The serrated edge of the cutter is gripped in a clamp at the end of the holder.

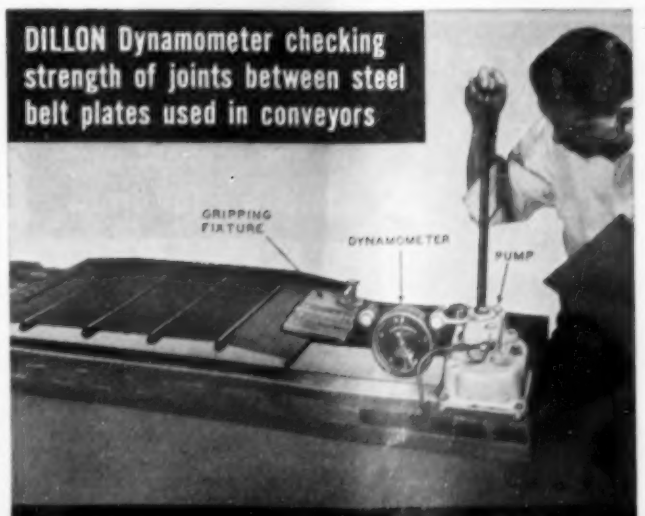
The contour of each cutting face is based on the principle employed in the Bokum internal boring tools in which built-in cutting and clearance angles and a distinctive form require resharpening on only one face. Three holder shank sizes are ½ by 1 by 6 in., ⅝ by 1¼ by 6½ in., and ¾ by 1½ by 7 inches.

If you write maker identify as **IEN - 5153**

The sales manager for a Chicago manufacturer was one of those "high tension" fellows for a good many years. He worked long hours, always under a strain. He slept short hours. He high tensioned himself into the hospital. There, under an oxygen tent, it occurred to him that he should learn to relax. Finally he got back on his feet and determined to record his experiences for others who might be heading in the same direction. We suggest that you listen to his calm and comforting voice as it comes from the new 78-rpm. record that now is available for $1.95, even before you approach your doctor for a $5 or a $25 examination. You will be surprised how simply the relaxing job can be put into action. You will congratulate yourself on the results you obtain. Just quietly ask Relaxation Records, 520 N. Michigan Ave., Dept. IEN, Chicago 11, Ill.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 5154**



DILLON Dynamometer checking strength of joints between steel belt plates used in conveyors

Precision Built

Compact. 5" dial model measures only, 8⅛" x 6⅛" x 3". Weighs 8 lbs. Fits into "tight" spots.

Accurate Dependable

MAKE *SURE* WITH A DILLON DYNAMOMETER

In actual field tests or in the lab., DILLON Dynamometers provide accurate test results. Measure static or moving loads instantly in conjunction with hoists, turnbuckles, air pistons, etc. 13 capacities from 0-500 lbs. up to 0-100,000 pounds. With max. pointer. WRITE FOR ILLUSTRATED LITERATURE AND FREE TENSILE STRENGTH COMPUTER.

W. C. DILLON & CO., INC.
14620K Keswick St., Van Nuys, Calif., (Suburb of Los Angeles)

If you write maker identify as **IEN - 5155**

Be fresh... Stay fresh

wear a **DUPOR** water-cooled
SMOKE MASK

Equipped with "Nod & Shake" Fog-Proof, Gas-Tight Goggles

For combined eye and lung protection of painters, foundrymen, smelters, oil refiners, chemists, firemen, etc. Sponge filter, soaked in water before wearing, keeps out paint spray, smoke, fumes, dusts; provides cool, clean air at every breath. Air-tight goggles give absolute eye protection. Goggles are fog-proof too.

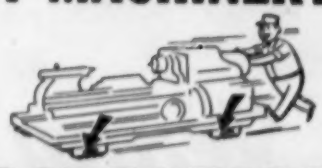
Sample sent $5.00 *pp*

H. S. COVER, South Bend, Ind.

If you write maker identify as **IEN - 5156**

now you can
MOVE HEAVY MACHINERY

or tons of equipment, materials or supplies with a roller skid having the capacity to carry loads 3200 times its own weight . . .



IN ANY DIRECTION

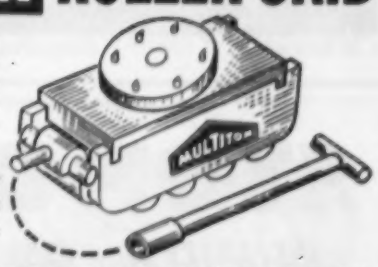
. . . making 90° turns — or ANY kind of turn you desire up to 360° — giving you maneuverability into the tightest spots . . .

QUICKLY AND EASILY

Does away with old-fashion roller-bar methods. Light in weight, easy to store, you save labor and costly handling . . .

WITH THE NEW **MULTITON ROLLER SKID**

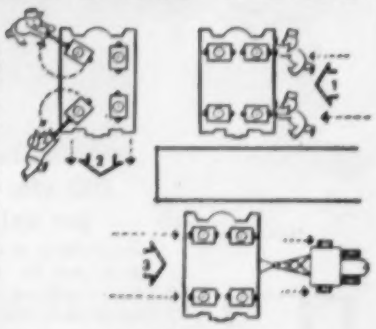
EQUIPPED WITH THE UNIVERSAL SWIVEL PLATE ACCESSORY . . .
Specially designed for easy moving and turning of even the heaviest loads.



HERE'S HOW MULTITON *CAN WORK FOR YOU!*

As in this example . . .

1. Production machine is moved broadside out of location. Note position of four Universal Swivel Plate-Equipped MULTITON ROLLER SKIDS.
2. Crew is now swiveling two left-hand skids 90°, while right-hand skids have already been turned.
3. If a longer movement is necessary, power is used to pull load.



Let us show you how MULTITON can meet your specific needs. Write for Bulletin 1E today.

STOKVIS ✿ EDERA & CO., INC.

18 Secatoag Ave., P. O. Box 249, Port Washington, N. Y.
POrt Washington 7-3390

If you write maker identify as IEN - 5158

"Big timesavings"

WITH GREENLEE HYDRAULIC KNOCKOUT PUNCH DRIVER . . .

This timesaving tool . . . coupled with GREENLEE Knockout Punches . . . makes fast, easy work of enlarging knockouts or cutting entirely new openings for conduit up to 4". Operation is simple, *fast*. Over *eleven tons* of hydraulic ram force drive punches through 10-gauge metal with ease. Simplifies cutting holes in tight places, too . . . no wrench space needed. Write for complete details today.

GREENLEE TOOL CO., 1865 HERBERT AVE., ROCKFORD, ILLINOIS

If you write maker identify as IEN - 5159

the BEST TOOL for every cleaning job

an EXCELLENT FIRE PRECAUTION too

HYPRESSURE

Jenny

STEAM CLEANER

New Series "1800" Jenny, ideal for industry's heavy-duty cleaning jobs.

As a general maintenance tool JENNY will save you up to 90% in man-hours and plant cleaning costs by removing oils, grease, muck and grime from machinery, conveyors, floors, walls, skylights, semi-finished products, tools and equipment, *10 times faster—and better* than bucket, brush, and scraper, volatile solvents, or other outmoded cleaning methods. And you'll realize additional savings through the stepped-up production which results when mechanics work with clean tools and equipment.

Add to this the fact that by JENNY steam cleaning you are eliminating the oils, grease, and other inflammables that spark fires and spread them, and you can see why a *JENNY in your plant is one of the best methods of fire precaution you can take.*

Send for Catalog today for full facts.

HYPRESSURE JENNY DIVISION

HOMESTEAD VALVE MANUFACTURING CO.

Serving Since 1892

P. O. BOX 85 CORAOPOLIS, PA.

If you write maker identify as IEN - 5160

STOP DUST

INSTANTLY with DUSTKOP

DUSTKOP 1400 cfm.

DUSTKOP 3600 cfm.

300 cfm to 10,000 cfm per unit (22 models)

Standard pre-tested, available from stock. Ask for catalog 605-2. Describe dust problem for recommendation by return mail. No obligation.

AGET-DETROIT CO.
401 Main Street
ANN ARBOR, MICH.

USEFUL INFORMATION
(Continued)

If you write maker identify as IEN - 5161

PLASTICS . . Instruction booklet on fabricated methods for Vinyl rigid sheets

Bakelite Company
300 Madison Ave., Dept. IEN, New York 17, N. Y.

Making use of thermoplastic and other properties of Vinyl rigid sheets is detailed in 40-page Booklet S-1. Instructions cover bending, blow molding, vacuum molding, compression forming, machining, finishing, cleaning, polishing, cementing and bonding, printing, marking. A directory gives names and addresses of suppliers of products mentioned.

If you write maker identify as IEN - 5162

PRESSES . . Three motion pictures show operation and use of company's hydraulic press

Denison Engineering Co.
1160 Dublin Road, Dept. IEN, Columbus 16, Ohio

Three 16-mm. sound films now are available without obligation to acquaint you with the company's Multipress and its uses in primary operations, processing and fabrication, subassembly, final assembly, testing, inspection. "Multipress", 30 min. showing time, describes the machine. "Blanking and Forming", 10 min., shows production scenes. "Index to Profits", 20 min., is on company's hydraulic index table.

If you write maker identify as IEN - 5163

ROPE . . How to select and use it described by text and examples in new booklet

American Mfg. Co.
West & Noble Sts., Dept. IEN, Brooklyn 22, N. Y.

How rope is made starts new 36-page edition of the company's "Book of Rope Facts". How to select rope is described by industry and service. How to use rope is described by instructions, splice and knot pictures, sling angle diagram, block reeving. You may be interested in elastic nylon rope, buoyant polyethylene rope, heat-resistant glass rope.

If you write maker identify as IEN - 5164

STEEL . . Reasons for use of alloy steels are presented by 60 examples in new 212-page book

Climax Molybdenum Co.
500 Fifth Ave., Dept. IEN, New York 36, N. Y.

Letterhead request will bring you a copy of new book, "Alloy Steels Pay Off", intended to bring you up to date on the benefits of using alloy steel in product design. A 30-page introductory section presents general information on the subject. This is followed by a set of 60 case history examples ranging from anchor chain to transformer shells.

If you write maker identify as IEN - 5165

STEEL . . Machining instructions for stainless steel bar in 96 page booklet

Republic Steel Corp.
3100 E. 45th St., Dept. IEN, Cleveland 27, Ohio

Cutting speeds, feeds, production-estimating data are given at the start of new Booklet ADV-607, "How to Machine Republic Enduro Stainless Steel Bars". It follows with thread data, wire gages, quality control tables, steel specifications, machining suggestions, typical troubles and remedies.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5166

Order a BRUNT FAULTFINDER today and prevent a shutdown tomorrow

Don't gamble against a ground on an energized power circuit. It can cause a costly production shutdown tomorrow. Only the Brunt Faultfinder can make sure it won't happen. Country's largest manufacturers depend on it. Price $450, express prepaid.

PRINCIPAL FEATURES

- Imposes only 2 amperes on circuit.
- Can be used in dark or noisy locations.
- No pulling of switches or interference with production.
- Locates faults on ungrounded wiring systems up to 550 volts, a.c. or d.c.
- Traces pole line signals without climbing.
- Combination ground detector and fault locator.
- Equally strong signal on open or enclosed wiring.
- No delicate meters or instruments to adjust.
- Compact, durable—easy one-man operation.
- Phase indicator lights visible at distance.

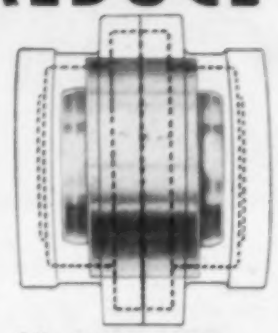
SEND ORDER TODAY

SEND FOR THIS NEW BOOKLET

PARR
MANUFACTURING CORP.
25 Tichenor Lane
NEWARK 5, N. J.

If you write maker identify as IEN - 5167

REDUCE FAILURE



- of shafts
- bearings
- armatures
- couplings

3/5 USUAL SIZE
1/2 USUAL WEIGHT
of flange type with same shaft size, HP capacity

REVOLUTIONARY Sier-Bath Flexible GEAR COUPLINGS

Smaller, lighter for lower moment of inertia, less wear on equipment, lower power costs, more compact designs. Simpler (only 7 parts) . . . assembled, uncoupled in *seconds*. Stronger, safer . . . one-piece forged steel sleeve transmits the load . . . no nuts, bolts, flanges. Call your Sier-Bath Coupling Distributor or Representative . . . send for CATALOG. *Sier-Bath Gear & Pump Co., 9246 Hudson Blvd., N. Bergen, New Jersey.*

Founded 1905 Member A.G.M.A.

Standard Mill Motor Vertical Shaft Floating Shaft Spacer

Also Manufacturers of Precision Gears and Rotary Pumps

If you write maker identify as IEN - 5168

This magnifier a favorite in toolrooms

Combines extremely wide field (2¾") with moderately high magnification (3.5X). Double lenses for reducing aberration. Easy to hold, tough plastic mount. Only $3.60 at leading industrial suppliers. See complete line $1 to $25. Bausch & Lomb Optical Co., 51529 Bausch St., Rochester 2, N. Y.

Write today for tell-all handbook and catalog, "INDUSTRIAL MAGNIFIERS, HOW TO CHOOSE AND USE THEM"

BAUSCH & LOMB
Industrial Magnifiers

If you write maker identify as IEN - 5169

SMITHS TACHOMETERS

FOR PRECISE AND RAPID MEASUREMENT OF SHAFT SPEEDS, CUTTING SPEEDS, AND SURFACE SPEEDS.

MAGNETIC DESIGN is simple, compact, and rugged. Requires only 0.075 ounce-inch torque at 5,000 r.p.m.

JEWELLED for permanent precision. Accuracy of ±0.5% in either direction of rotation and in any position.

NINE RANGES to 50,000 r.p.m. Four models, each multi-range to suit your specific needs.

OVERSPEED PROTECTION inherent and built-in. STOP BUTTON "memorizes" reading when desired.

Complete Service Facilities

CLARENCE J. MARX CO.
Box 4033, Dept. IEN • Cleveland 23, Ohio

If you write maker identify as IEN - 5170

NUPLA soft-faced MALLETS

last up to 30 times longer!

The only mallets supplied in four hardnesses to meet All your pounding needs ... Made of super-lasting NUPLAFLEX

Heads will not mushroom, chip or flake. Lack of projecting parts prevents sparking—makes all head surfaces usable. Choice of hard, tough, medium or soft heads, four sizes, less sting and rebound, and perfect balance are features that mean faster, more economical and better work. Ask your distributor for an on-the-job test — or write for catalog information.

Check These Quality Features

- Massive, Powerful Head
- Conventional Weights, 6 oz. to 1½ lbs.
- Four Sizes
- Perfect Balance
- GUARANTEED

NEW PLASTIC CORP. NUPLA LOS ANGELES

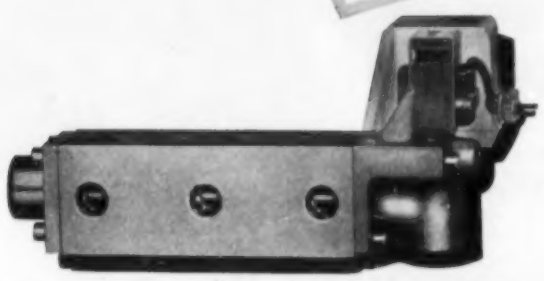
NEW PLASTIC corporation
1026 No. Sycamore, Los Angeles 38, Calif.

544

If you write maker identify as IEN - 5171

Quick-As-Wink AIR AND HYDRAULIC Control Valves

FEATURE THIS MONTH

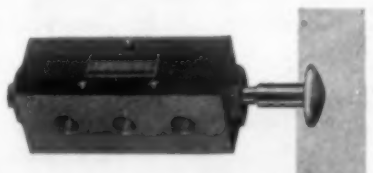


Single Plunger Solenoid Pilot Operated Valves

They'll give you millions of cycles of efficient trouble-free operation

● Quick-As-Wink Solenoid Valves are unsurpassed for positive, trouble-free dependable service . . . they give users millions of cycles of fast, high speed — and safe — operation. All parts are rugged. Low amperage requirement of the solenoid eliminates intermediate relays and simplifies electrical circuits. ⅜" to 2" sizes. 2-way, 3-way or 4-way actions. Bucking cylinder or double solenoid return. Send for the data sheets. Get full details about Quick-As-Wink, America's outstanding valve line, today.

also the following

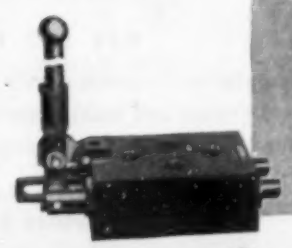


PUSH BUTTON OPERATED AIR VALVES

Push-pull or push and spring return operation — ⅛" and ¼" tapped connections. Widely used for controlling cylinders and many other applications. Air to 125 psi — vacuum—can also be used in low pressure hydraulic service.

LEVER OPERATED HYDRAULIC VALVES

Two position or three position valves ½" to 1½" sizes for line pressures 1000 to 5000 psi. Can be furnished in neutral, compound-exhaust or compound-on actions. Pilot cylinder operated types available up to 4".



For Fully Descriptive Data Sheets Write

C. B. HUNT & SON, Inc.

Hand, Foot, Lever, Cam, Pilot, Diaphragm and Solenoid Control Valves

2032 EAST PERSHING STREET • SALEM, OHIO

If you write maker identify as IEN - 5173

PAINTING . . Syphon spray gun with twin side ported delivery nozzle

Source: BINKS MFG. CO.
3122 Carroll Ave., Dept. IEN, Chicago 12, Ill.

Double atomization

Model 66SF designates new twin side ported nozzle design for application on the company's Models 18, 19 and 29 syphon type paint spray guns. The new nozzle produces a wide pattern, provides fast fluid flow. It is particularly suited to spray synthetics and lacquers. It can be kept clean without difficulty. Back pressure, at the point of atomization, is comparatively low to minimize need for air.

If you write maker identify as IEN - 5174

BEARING . . Teflon, graphite, glass and lubricant are pressure molded

Source: CHEMICAL & POWER PRODUCTS INC.
11 Broadway, Dept. IEN, New York 9, N. Y.

Technical data upon request

Style FM-4 designates a new hard, corrosion resistant, low friction molded compound containing teflon, glass, graphite and an inert lubricant. The compound is molded by the company and supplied in the form of bushings, bearings, rod, tube and cylindrical shapes. Applications are on submerged pumps, as tail shaft bearings on vertical mixers and on reactors requiring an inert material that will be compatible with the product being handled.

The compound can withstand continuous contact with strong acids and organic solvents at normal and elevated temperatures. It can be machined to close tolerances. No lubrication is required under certain conditions in low speed operations.

Rod, tube, cylindrical shapes, are available to 6 in. in length and from 1 to 4 in. in outside diameter in ¼-in. increments. Inside diameters in rod and cylindrical forms range from ½ to 2 in. in ¼-in. increments.

If you write maker identify as IEN - 5175

TRANSFORMER . . Sealed pulse unit for use in digital computing equipment

Source: SPRAGUE ELECTRIC CO.
165 Marshall St., Dept. IEN, North Adams, Mass.

Bulletin 502

Miniature Type 10Z, for flip-flop, buffer, pulse amplifier and gating circuits, and the larger Type 20Z, for blocking oscillator, push-pull memory ring driving circuits, are new hermetically sealed pulse transformers for a pulse range from 0.1 to 20 microseconds duration. The small units measure ¾ in. in length by ½ in. in diameter. The larger assemblies measure 1¾ by 1¼ by ½ inch.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5176

MAKE ALL FLOORS

METAL, CONCRETE, AND WOOD

SLIP-PROOF

WET OR DRY

USE **R-MIR-DEK**

NON-SLIP COATING

FOR ALL FLOORS, STAIRS, RAMPS, AREAS AROUND MACHINERY AND LOADING PLATFORMS.

R-MIR-DEK NON-SLIP COATING is the only lightweight safety floor coating that is fire retardant, anti-corrosive, easily applied, and oil, grease, alkali, and acid-resistant. Compounded of durable phenolic resins and polymerized oils with everlasting aluminum oxide granules added. Available in white, olive drab, red, light and dark grey, sea grey, brown, regular and navy blue, black, and green.

FREE! 2-color R-Mir-Dek illustrated brochure describes this lightweight, safety floor coating. Write to Dept. IEN-5.

MIRACLE ADHESIVES CORPORATION
214 East 53rd Street, New York 22, N. Y.

If you write maker identify as IEN - 5177

5415

REMEMBER . . . THE WORD

Varimatic®

It's America's most outstanding super sensitive, small hole, precision drilling machine. And the difference in price between the Varimatic and the cheapest small hole drilling machine is reckoned in pennies per day. Consider that fact when you specify.

For prices and complete specifications

ASK FOR FREE BULLETIN 5415

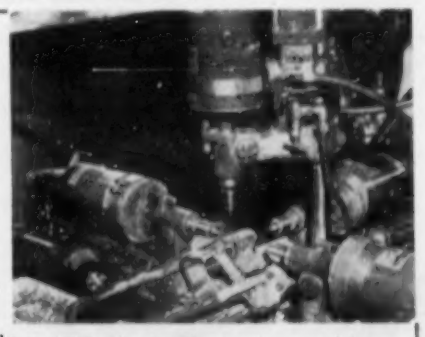
ADDRESS: THE HAMILTON TOOL COMPANY
905 HANOVER STREET
HAMILTON, OHIO

IT'S A Hamilton Tool

USE IT WITH CONFIDENCE

If you write maker identify as IEN - 5178

SMALL HOLE DRILLING SPEEDED AUTOMATICALLY



Pictured above is an E-M drill head setup that has been used for years in a large gasoline engine manufacturing plant. Operation starts automatically when the piece is clamped in place. Three cross holes are then drilled followed by a fourth axial drill to size and deburr. Hole sizes range from No. 60 to 50. One man completes all operations at once whereas four separate operations were required before E-M automatic drill heads were used. Production and quality are way up, and stay up year after year.

Perhaps you have a similar operation in your plant that is adaptable to faster, more efficient E-M automatic drilling. There is no obligation for our engineering service.

The outstanding features of the E-M automatic drill heads listed below, can cut your small hole drilling costs to a minimum:

1. 1000 to 10,000 or 2,500 to 15,000 RPM ball bearing motor with instant speed selection insures maximum drill efficiency.
2. Super accurate checking capacity .004" to 5/32" with selected chuck or collets, and vibration-free direct spindle drive provide a true running drill for precision and longer life.
3. Positive air feed to spindle with rapid approach to work and completely adjustable hydraulic feed control through the full depth of the work and during breakthrough.
4. Guaranteed precision and accuracy results from a decade of service to the field.

PRICE COMPLETELY EQUIPPED $253.00 and up

the ELECTRO-MECHANO Co.
267 E. ERIE STREET • MILWAUKEE 2, WISCONSIN

If you write maker identify as IEN - 5179

hydro-line cylinders series "J"

conform to J. I. C. standards

RUGGED . . .

Where it counts most!

CARTRIDGE . . . metallic rod-wiper, packing, bushing in one unit.

RUGGED BODY . . . all steel end caps and barrel.

PISTON RINGS . . . step-cut joint, long life, minimum leakage.

PRESSURE . . . 2,000 psi heavy-duty . . . 3,000 psi non-shock.

SIMPLICITY . . . no tie-rods . . . no retainer rings.

hydro-line *Manufacturing Co.*

5610 PIKE ROAD • ROCKFORD, ILLINOIS

If you write maker identify as IEN - 5180

DELAVAN TYPE WSS SPRAY NOZZLE

—ideal for

COOLING TOWERS
BRINE SPRAYS
SPRAY WASHING
AERATING
GRAVEL WASHING
COAL WASHING

—and many other industrial uses.

Write for Catalog 31

DELAVAN MANUFACTURING CO.
GRAND AVENUE & 4TH STREET
WEST DES MOINES, IOWA

If you write maker identify as IEN - 5181

General Container Engineering

CAN HELP YOU CUT PACKING and SHIPPING COSTS

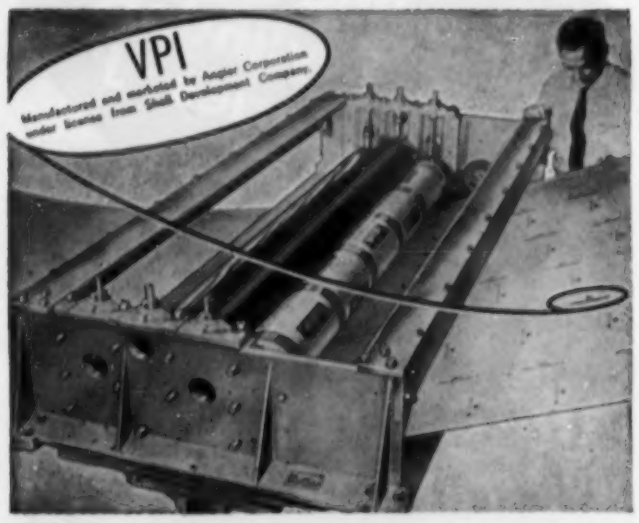
Send for free Booklet

ENGINEERED CONTAINERS FOR EVERY SHIPPING NEED

General Box
1815 Miner Street, Des Plaines, Illinois

If you write maker identify as IEN - 5182

Print Your Product as You Make It!



NEW GOTTSCHOPRINTER eliminates costly separate operation for printing all-over designs or repeated legends on any material processed in continuous web. Prints clean, sharp, permanent impressions on metal, rubber, linoleum, cloth, plastics, gasket material, paper, laminations, etc. up to 1" thick and 72" wide ... prior to rewinding, slitting, sheeting, fabricating. Full details on request ... but please state requirements.

Gottscho ADOLPH GOTTSCHO, INC. Hillside 5, N. J. 50 Years of Leadership

In Canada: RICHARDSON AGENCIES LTD., Toronto & Montreal

USEFUL INFORMATION
(Concluded)

If you write maker identify as IEN - 5183

STEEL . . Cardboard slide selector for properties and grades of stainless steel

Crucible Steel Co.
Henry W. Oliver Bldg., Dept. IEN, Pittsburgh 30, Pa.

One side of new 11 by 8½-inch Rezistal Stainless Steel Selector reads physical properties, room-temperature and elevated - temperature, mechanical properties against 27 grades. The other side reads recommended grades against requirements such as corrosion resistance, machinability.

If you write maker identify as IEN - 5184

STEEL . . List of motion pictures available on loan from the company reviewed in booklet

United States Steel Corp.
525 William Penn Place, Dept. IEN, Pittsburgh 30, Pa.

"Motion Pictures" titles 16-page pocket booklet that reviews those prepared and distributed by the company. They include 16 and 35-mm. sound prints, some in color, on subjects such as steel production, erection of a steel building, manufacture of wire rope, tubes. Suggestions are given on how to get best results from motion-picture showings.

If you write maker identify as IEN - 5185

THERMISTORS . . What they are and how to use them described in 56-page manual

Carboloy Department
11167 E. 8-Mile Road, Dept. IEN, Detroit 32, Mich.

Thermistors, thermally-sensitive resistors, are electronic semi-conductors to detect, measure and control physical energy. Manual TH-13 shows schematic application circuits, gives curves on static and dynamic characteristics of representative disc, rod and washer-type units.

If you write maker identify as IEN - 5186

VENTILATING . . Textbook of 232 pages on principles of moving air through ducts by fans

Industrial Press
148 Lafayette St., Dept. IEN, New York 13, N. Y.

"Flow and Fan" is new textbook that emphasizes the how and why of basic calculations involved in the movement of air and gases. It is written by Prof. C. Harold Berry of Harvard University. List price is $4. Two major topics are flow of gas through ducts and fan performance and control.

If you write maker identify as IEN - 5187

WATER TREATING . . Troubles and remedies concerning water employed for cooling tower service

Allis-Chalmers Mfg. Co.
909 S. 70th St., Dept. IEN, Milwaukee 1, Wis.

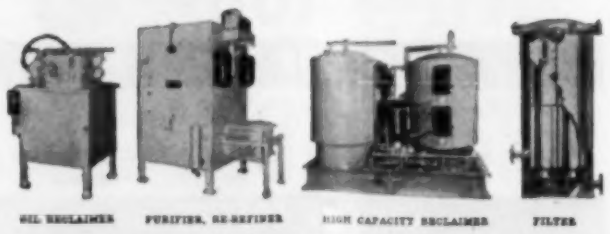
Water treatment for cooling towers is described in new 6-page Bulletin 28-X-7501A, No. 47A in the company's Water Conditioning series. It deals with problems encountered such as corrosion of metal surfaces, inorganic scaling, organic growth, delignification of the wood in the tower.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5188

HILCO LUBRICATING AND INDUSTRIAL OIL MAINTENANCE EQUIPMENT

Saves You MONEY, OIL and MACHINERY



A COMPLETE LINE OF EQUIPMENT FOR RECLAIMING, FILTERING, PURIFYING AND RE-REFINING OIL.

★ Hilco units are available for continuous or batch operation. You can keep your lubricating and industrial oils clean and recover large quantities of oil at low cost.

Whenever Oil is used it becomes contaminated—must be discarded or conditioned for further use.

There is a HILCO to do This Job for You
Cleans Oil, Reduces Down Time, Increases Production!

★ Tell Us About Equipment You Are Operating and We Will Forward FREE Literature and Recommendations.

OIL PURIFIER DIVISION
THE HILLIARD CORPORATION
35 W. 4th ST. • ELMIRA, N. Y.
IN CANADA — Upton - Bradeen - James, Ltd.
890 Yonge St., Toronto, 3464 Park Ave., Montreal

If you write maker identify as IEN - 5189

go to a SPECIALIST for helical finned heat transfer tubing

- straight lengths
- compact coils for refrigeration condensers
- blast air heating coils
- blast air cooling coils

OVER 100 SIZES IN PRODUCTION

Made to your individual specifications!

ROME TURNEY RADIATOR COMPANY

200 EAST FRONT STREET ROME, NEW YORK

If you write maker identify as IEN - 5190

FEEDRAIL® Trolley Busways

As long as the source of power stays alive, FEEDRAIL will provide safe, sure and continuous electric power to this crane and hoist. That's because FEEDRAIL is the dependable way to electrify moving equipment such as this.

FEEDRAIL trolley busways eliminate the problems and troubles of open wiring and long, trailing power cables. Power is taken off through easy rolling trolley outlets. Both the current-carrying bus bars and the trolley contacts are protected by sturdy steel housings. There's no chance of broken conductors suddenly interrupting operation — and there's virtually no maintenance. The entire installation is compact, out of the way, and trouble-free.

With its straight, curved and transfer track sections, FEEDRAIL can be readily adapted to any materials handling layout. Systems are available in capacities ranging from 60 amperes for budget hoists up to 500 amperes for big tonnage traveling cranes.

NEW!

SPECIAL SERVICE TROLLEYS FOR BUDGET HOISTS

These 20 ampere trolleys have been especially developed to allow 60 ampere FEEDRAIL systems to be used for continuous or heavy duty service on budget hoists and light tonnage monorails. Full information on request.

GET THE FACTS

Descriptive literature showing how FEEDRAIL can be used to make crane and hoist operation faster, safer and more dependable is available on request. Write Dept. N-5.

SOLD BY MORE THAN 1,000 ELECTRICAL DISTRIBUTORS COAST TO COAST

CH4-3A

ELECTRIC FEEDRAIL® Never Becomes Obsolete
FEEDRAIL CORPORATION
Subsidiary of Russell & Stoll Company, Inc.
125 BARCLAY STREET NEW YORK 7, N. Y.

SPECIALLY QUALIFIED REPRESENTATIVES IN PRINCIPAL CITIES

If you write maker identify as IEN - 5192

Are You Saving All You Can with Liquid Meters?

HERE'S A QUICK CHECK LIST

of savings made every day with meters for more than 150 industrial liquids. Ideas for you!

AUTOMATIC BATCH MIXING: Measure liquid ingredients with **Auto-Stops.** No slow weigh tanks, bags, buckets. Push buttons to set... meter shuts off automatically, accurately.

ELIMINATE REJECTED BATCHES: In pharmaceutical plant, Neptune meters stopped errors, saved costly ingredients, paid for themselves in one month!

AUTOMATIC PROCESS CYCLING: Auto-Stop meter with electrical switch actuates pumps, agitators, valves, etc. Saves time, labor, power.

EASIER INVENTORY: Neptune meters keep track of inventory, consumption, production rates. They put a stop to waste, verify full measure received or delivered.

AUTOMATIC DRUM FILLING: You can buy a meter that speeds filling of drums, radiators, tanks, etc. Repeats exact quantity every time. Saves time, prevents spills or "shorts."

OIL BURNERS & DIESELS: Low flow Neptune meter registers daily fuel consumption of oil burners or diesels. Eliminates bulky day-tanks.

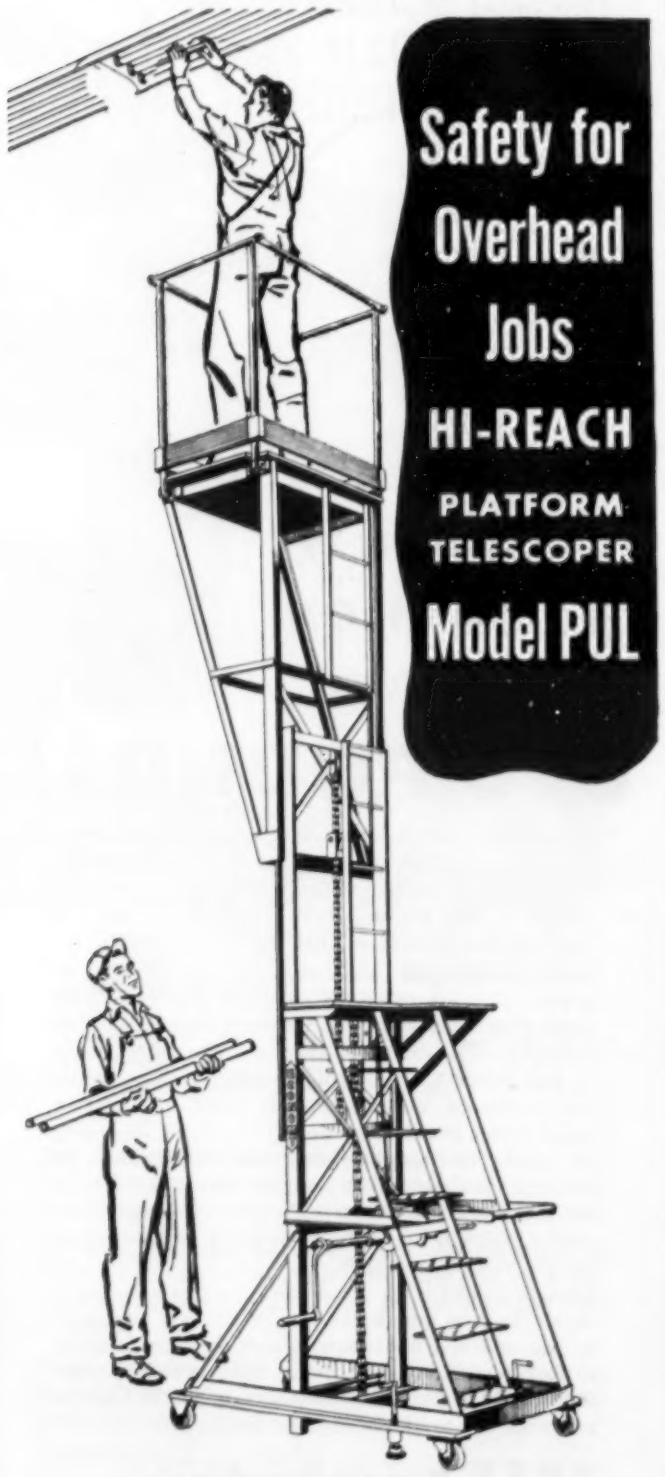
WATER CONDITIONERS: When water conditioner needs recycling, Trident meter does it automatically. Yours may have one... look and see.

TANK TRUCK DELIVERIES: Many industrial liquids can be delivered by metered tank trucks with greater ease and accuracy than truck markers, gauges or sticks.

Ask for free metering data book 566RI

NEPTUNE METER COMPANY *Branches in* NEPTUNE Liquid METERS **50 W. 50th ST., NEW YORK 20** *Principal Cities*

If you write maker identify as IEN - 5193



THREE STANDARD MODELS

No. 1—Platform lift 10'9"	$305.00
No. 2—Platform lift 11'9"	315.00
No. 3—Platform lift 15'0"	340.00

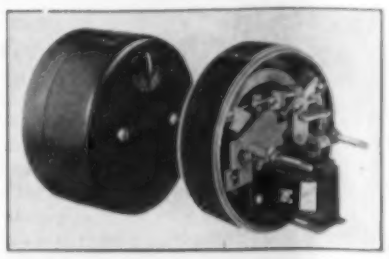
Equipped with 5" diameter base wheels
Rubber-tired wheels $8.00 extra
F.O.B. Chicago
Other models with platform lift up to 95'
Write for complete specifications.

ECONOMY ENGINEERING COMPANY
4502 West Lake Street, Chicago 24, Illinois

If you write maker identify as IEN - 5195

DRIVE . . Magnetic disc brakes for use on 1/20 to 2 hp. motors

Source: STEARNS MAGNETIC INC.
626 S. 28th St., Dept. IEN, Milwaukee 46, Wis.



Specifications on request

Series 40 is a new design of solenoid operated disc brake for use on motors in the new NEMA frame standards in the 1/20 to ½-hp. range. It measures 5 in. in diameter by about 3½ in. in length. Torque rating is in a range from 6 in. lb. to 1 foot pound. The assembly mounts on the standard NEMA frames 42-C and 48-C. It also can be mounted independent of the motor.

Series 50 is designed for the re-rated NEMA frames in the 1/6 through 2-hp. range. It is available in four torque ratings from 1½ to 9 ft. lb. and is designed to mount on the frames 56-C and 66-C as well as integral-hp. motor frames 182 and 184.

If you write maker identify as IEN - 5196

GAGE . . Set of plug units in cabinet for short run inspection

Source: SIZE CONTROL CO.
2500 W. Washington Blvd., Dept. IEN, Chicago 12, Ill.

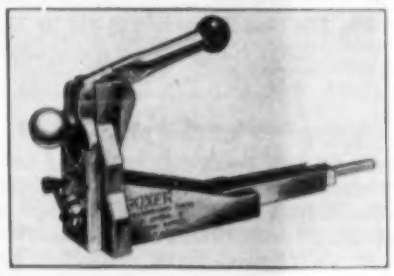
Specifications upon request

The company announces availability of its reversible plug gages, previously described IEN-8414-53, in mahogany cabinet assemblies. The units apply in product research, in checking tolerances, in general trouble shooting during manufacturing operations. Available sets are subject to specification for size tolerances and increments to suit any given requirement. Drill size, fractional and letter size gages, with universal collet type handles, make up each set.

If you write maker identify as IEN - 5197

STAPLING . . Lever operated tool to close and top staple filled cartons

Source: INTERNATIONAL STAPLE & MACHINE CO.
809 E. Herrin St., Dept. IEN, Herrin, Ill.



Girls can use it

Weight is a little over 5 lb. for this new portable Boxer retractable anvil stapler. Overall dimensions are 16½ by 4¼ by 7 inches. The stapler has been developed for use by small volume shippers and for odd job carton closing in large shipping departments. It meets the Consolidated Freight Classification Rule 41 requirements. The retractable anvils penetrate the carton. They guide and close the staple as it is driven. Then they retract into the stapler head. Staples are held in a magazine.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5198

Immediate Delivery

Buy Direct from the Manufacturer and Save

Francis EST. 1880 **FACTORY-MILL & WAREHOUSE TRUCKS**

Cutting Handling Costs since 1880

WRITE *TODAY for catalog and prices*

3000-lb capacity

Complete Line — For every use. Standard sizes 27" x 48" and 30" x 54" in stock ready for immediate shipment.

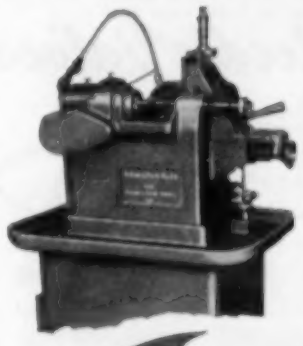
Need more good trucks quick? Buy direct from the manufacturer and save —time AND money. Francis heavy duty, economical trucks feature strong iron work —hardwood frame—rigid construction. All carefully machine fitted. Steel rims or rubber tires.

Manufactured by **HOOSIER FENCE CO. Inc.**
Dept. IEN 1701 E. 38th St., Indianapolis, Ind.

If you write maker identify as IEN - 5199

5418

PRECISION GEARS ON RELENTLESS PRODUCTION SCHEDULES



The feature of *independent* selection of speed, feed and indexing, which speeds machine set-up and provides a means for matching cutting speed and work feed to the material being machined, together with a "reserve of accuracy" built into the machine, has placed the Hamilton Precision Small Gear Hobber high in perference in the precision instrument field.

GET THE FACTS!
WRITE FOR FREE BULLETIN 5418
ADDRESS: THE HAMILTON TOOL COMPANY
905 HANOVER STREET, HAMILTON, OHIO

IT'S A Hamilton Tool
USE IT WITH CONFIDENCE

If you write maker identify as IEN - 5200

Now's the time to discard costly, obsolete methods . . . replace with FEDERALS for

more profitable presswork!

FEDERAL DIAL FEED PRESSES

No. 7
Dial Feed
Capacity, 80 tons

Modernize with new Federal Dial Feeds and watch your production go up, and costs down! Rugged, precision-built, versatile, this press does three to five times the work of a standard press; cuts downtime, reduces accidents, eliminates expensive equipment. Finest materials and workmanship. Sizes, 6 to 80 tons. Automatic feed and ejectors, if desired.

Write for new Catalog

THE FEDERAL PRESS COMPANY
503 Division St., Elkhart, Ind.

If you write maker identify as IEN - 5201

NO DOWNTIME *in over a year using a* PLATECOIL *in a parkerizing tank*

REPLACED PIPE COIL

The only time this Platecoil was removed in over a year was to take its picture. The single 22" x 23" Platecoil has heated a 100-gallon Parkerizing tank, in daily use, ***without downtime*** at the Lycoming Spencer Division of Avco Corp. Built of Electro-Polished Stainless Steel, the Platecoil has required no cleaning or repairs. Platecoils will replace pipe coils at a savings in any heat transfer application.

Send for complete technical manual and descriptive Bulletin No. P56

PLATECOIL Division **Tranter Mfg. Inc.** LANSING 4, MICHIGAN

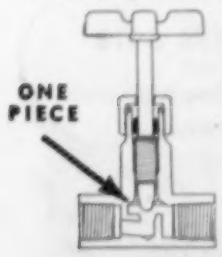
If you write maker identify as IEN - 5202

New MARSH Needle Valves

MAXIMUM WORKING PRESSURE 10,000 PSI

. . . for finer regulation of water, oil or gas

First needle valve to combine all the characteristics called for in modern industry. Embodies sturdiest basic construction—machined from solid bar stock—suitable for pressures to 10,000 psi and equally efficient in lower range. Note stem guide fused to body by new "Conoweld" process, eliminating faults of conventional two-piece valves. Stem 416 stainless steel. Stem threads fine pitch for strength and micrometer regulation. Body electro-zinc plated. Sizes ⅛" to 1", blobe and angle patterns.



Ask for new Needle Valve Catalog

MARSH INSTRUMENT CO. *Sales affiliate of Jas. P. Marsh Corporation*
Dept. A, Skokie, Ill.

If you write maker identify as IEN - 5203

PIC *Steel Unions*

Makers of new equipment get both looks and performance with Pics on 150# service. Bright and cheerful looking, Pics help sell the merchandise. Soundly built, their special wedge type bronze seat gives tight, safe closure. Ends are heavy steel pipe coupling stock, uniformly flat sided to take open end wrenches for fast installation. Overall zinc plating (including threads) protects against rust. Pics have a price advantage also — they cost *less* than a galvanized, *no more* than a black malleable union!

Write today for FREE Samples

DART UNION COMPANY
130 Thurbers Avenue, Providence 5, R.I.
The Fairbanks Co. — Distributors
Boston • New York • Pittsburgh • Rome, Ga.

If you write maker identify as IEN - 5204

HIGH AND LOW TEMPERATURES

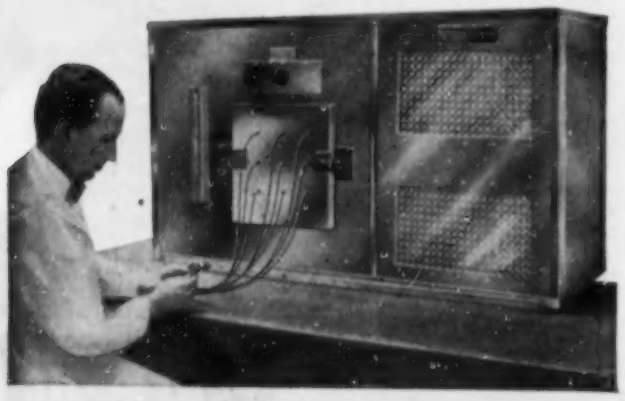
NEW BENCH-TYPE TEST UNIT

WEBBER
TRADE MARK REGISTERED

COMPLETE TEMPERATURE RANGE
TESTING UNITS

Combine high and low temperatures within the same cabinet with all controls self contained. Unit measures 50"x28"x20" with a testing chamber 12"x12"x12". Temperature range is from -80° F., to 185° F. Heat application is accomplished with reverse cycle refrigeration, which eliminates the hazards associated with open heating elements. A blower is provided for even distribution of temperatures and greater testing accuracy. Latch-type or hinge-type door optional. Accelerated pull-down to -80° in 30 minutes or less.

Write today for more complete information



INDUSTRIAL FREEZER DIVISION
WEBBER MANUFACTURING COMPANY, INC.
(Formerly Webber Appliance Co., Inc.)
2746 MADISON AVENUE • INDIANAPOLIS 3, INDIANA

If you write maker identify as IEN - 5205

SPRAYING . . Electric tool delivers penetrating insecticide fog

Source: WEST DISINFECTING CO.
42-16 West St., Dept. IEN, Long Island City 1, N. Y.

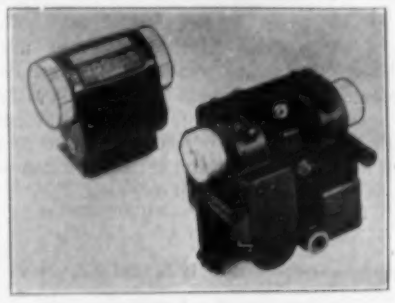
Death to bugs

Robot Mistorizer is a new electrically operated spray tool that breaks down oil or water base insecticide into a dry mist and ejects it under high pressure. The resulting fog penetrates into cracks and crevices to exterminate flying and crawling insects. **A timer** can be set to turn off the action. **A built-in regulator** permits adjusting the insecticide delivered at the rate of 1 pt. to 1 gal. per hour. The assembly includes dual nozzles to cover a wide area. Operation of the ⅜-hp. motor is on 110-volt ac. The assembly weighs 13 lb., measures 12 by 9 by 13 inches. Its tank holds 1 gallon of insecticide.

If you write maker identify as IEN - 5206

TESTING . . Gasoline flow meter records consumption of a gasoline engine

Source: McCULLOCH MOTORS CORP.
9775 Airport Blvd., Dept. IEN, Los Angeles 45, Calif.



Accurate within 2 per cent

New flow meter, reading to the nearest 0.01 gal., consists of a measuring element that applies in the gasoline line to an internal combustion engine and a counter that reads to 999.99 gal. and then repeats or can be reset or locked against resetting. Maximum flow capacity is 12 gph. The meter can be employed, in connection with an interval timer or an instrument, to measure distance in the case of a mobile engine mounting. Counter and meter elements are connected electrically. Operation is on 6-volt dc. The meter measures 3¾ by 4 by 2½ inches. The counter measures 3⅛ by 1¾ by 3 inches.

If you write maker identify as IEN - 5207

Printed electric circuits are now being produced on a new "printed eyelet board" by General Electric Co., Electronics Park, Dept. IEN, Syracuse 1, N. Y. The required "wiring" is plated on the board and, at the same time, plating is carried through terminal holes in the board to make connection between the two faces without the use of separate eyelets or specially designed terminal pins. The printed eyelet process permits plating holes as small in diameter as the thickness of the material on which the wiring is plated. The new application method permits assembly on curved as well as flat mounting board surfaces.

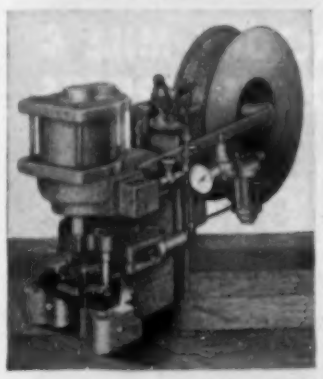
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5208

FAST, COST-CUTTING TERMINAL ATTACHING on NEW "P-M"

advanced design

COLD CRIMPING MACHINE



Advanced design of new P-M automatic terminal attaching machine provides many improvements that drastically reduce tool set-up time and production lag. Interchangeable rolling tools are quickly set up in special die-set fully accessible in machine, and removable for faster tool changing on bench. Extra die-sets keep tools set up for quick job change-over.

Using strip terminals in continuous form supplied on nonreturnable reels, the machine automatically crimps and cuts off in one operation to produce fast, efficient, economical terminations. Engineered for rugged, continuous operation. Requires minimum production space. Simple, quiet air pressure operation. Modern color scheme and design innovations promote operator acceptance and minimize operational fatigue.

Low priced for short or long runs, P-M machine is sold outright with set of rolling tools ready for operation. Illustrated catalog of standard strip terminals, with full specifications, available when requested on company letterhead.

PATTON - MacGUYER CO.
18 Virginia Avenue . . . Providence R. I.

If you write maker identify as IEN - 5209

NEARLY $7,000.00 SAVED!

$597.50 SHORT-RUN TOOLING COST CHEAPER THAN HANDMADE MODELS—RISK MINIMIZED

. . . reported by Revco, Incorporated

A $7,500.00 permanent tooling outlay would have been necessary to produce two experimental models of a larger Revco "Zero-Max" variable speed transmission. Or make the pilot models by hand. The entire Federal tooling job cost $597.50, *less than what it would have cost Revco to make the models by hand.*

84 ACCURATELY STAMPED PARTS COST REVCO ONLY $9.86 PER TRANSMISSION—11.8c PER PART—USING FEDERAL'S "CLOSE TOLERANCE" SHORT-RUN STAMPING PROCESS.

"The parts received from Federal," states Revco President, Richard G. Gray, "were as clean and as accurate as if they were produced on permanent tools."

see our catalog in PRODUCT DESIGN FILE or write for copy

Got a tooling or stamping problem? Complete information is contained in Bulletins 101 and 161. Write for them.

Federal TOOL AND MANUFACTURING CO.
3612 ALABAMA AVE. (ST. LOUIS PARK)
MINNEAPOLIS, MINNESOTA
"QUALITY STAMPINGS IN SMALL QUANTITIES"

If you write maker identify as IEN - 5210

10¢ worth of SMOOTH-ON *supports* 690 POUNDS!

Smooth-On, with its expanding action and iron-hard set, made the joint which supports the load shown —an ash can loaded with iron filings to a total weight of 690 pounds. Only Smooth-On No. 1 is holding that eyebolt in that pipe!

Hundreds of Uses This principle can be used in dozens of ways around both plant and home. By expanding hard and tight within a repair, Smooth-On IRON Cement stops leaks, fills holes and seams in any metal, patches boilers, repairs water jackets and radiators, corrects wobbly bolts and screws, plugs tanks, holds loose parts tight — in fact, does all kinds of things where that combination of strength and expansion can be used. Smooth-On IRON Cement never tires, or softens from age. Years after a repair is made the Smooth-On will be found harder, tighter, stronger.

Keep Smooth-On No. 1 on hand for that emergency repair. It does not deteriorate. Whenever you need it, just mix and fix. It sets in half an hour, hardens to Rockwell R-70 in 24 hours. And of course there is Smooth-On No. 2, a slower-setting IRON Cement but with the same dependable properties.

S0402

FREE Repair Handbook

New, completely revised 48-page illustrated handbook, shows in detail how to make all the repairs referred to here plus dozens of others. Get a copy from your supply house or write us. Sent postpaid.

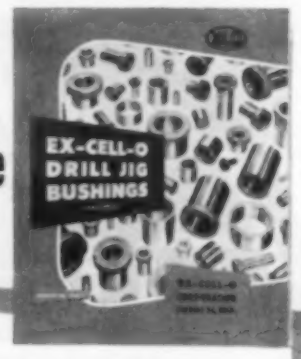
SMOOTH-ON MANUFACTURING CO.
Dept. 1, 572 Communipaw Avenue, Jersey City 4, N. J.

SMOOTH-ON

THE IRON CEMENT OF MANY USES

If you write maker identify as IEN - 5212

A Complete Bushing Guide



FOR YOUR ENGINEERING AND PURCHASING FILES

Everything you need to know about Drill Jig Bushings. This catalog pictures and describes A.S.A. standard bushings. Gives helpful suggestions to purchasers and designers, lists hundreds of Ex-Cell-O bushings available from stock. Makes ordering quick and easy.

Write Ex-Cell-O for this Bushing Guide—as many as you'll need.

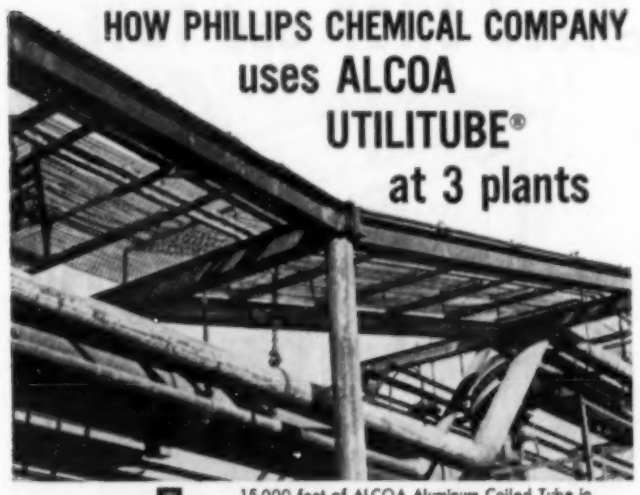
EX-CELL-O CORPORATION
DETROIT 32, MICHIGAN

XLO

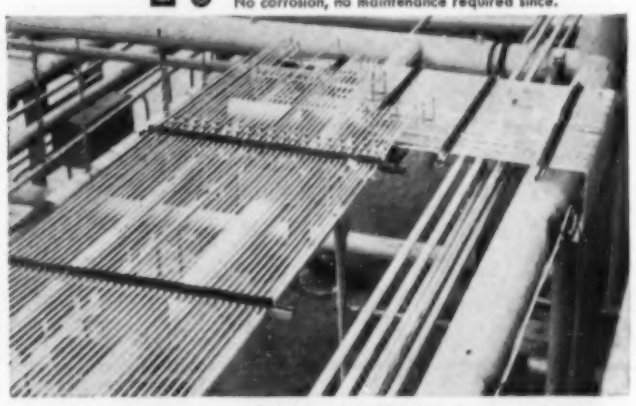
54-19

If you write maker identify as IEN - 5213

HOW PHILLIPS CHEMICAL COMPANY uses ALCOA UTILITUBE® at 3 plants



1. 15,000 feet of ALCOA Aluminum Coiled Tube in exposed air line service (15 PSI) at Pyridine Plant, Pasadena, Texas. Installed summer, 1952. No corrosion, no maintenance required since.



2. 6,500 feet of ALCOA Utilitube serves dry air (75 PSI) to pneumatic controls and instruments at Philblack Plant, Borger, Texas. Installed, August, 1952. Exposed to H_2S since then. No corrosion, no maintenance.

3. (Not shown) 7,500 feet of ALCOA Utilitube has been serving air (20 PSI) to instruments at Goldsmith Sulfur Plant, Goldsmith, Texas, since January, 1952. Tubing has required no maintenance, is in excellent condition.

You, too, can *use Alcoa Utilitube to save money.* It's the lowest cost corrosion-resistant metal tube you can buy . . . may very easily cut your tube costs by 40 per cent.

Use Alcoa Utilitube for fuel and lube lines, for hydraulic fluids, for air and refrigerants. It will not gum or sludge in petroleum service; discolor or contaminate the fluid it carries.

Alcoa Utilitube forms, flares and bends as easy as annealed copper yet work hardens less. At sub-zero temperatures it actually gets stronger!

Alcoa Utilitube and Fittings are available from your aluminum distributor. For complete information, write for the booklet, *Alcoa Utilitube.*

ALUMINUM COMPANY OF AMERICA
1005-E Alcoa Building, Pittsburgh 19, Pa.

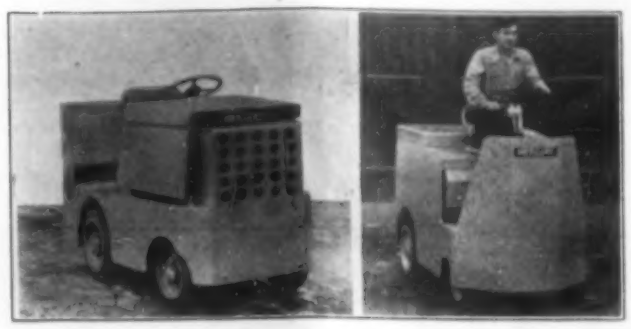
ALCOA ALUMINUM

ALUMINUM COMPANY OF AMERICA

If you write maker identify as IEN - 5215

TRUCK . . Industrial tractors to pull trains of tracking trailers

Source: MERCURY MFG. CO.
4044 S. Halsted St., Dept. IEN, Chicago 9, Ill.



Specifications upon request

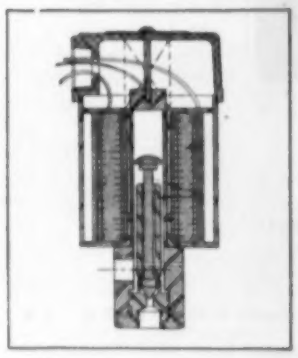
Banty Model 460 with engine drive, to the left in the illustration, and Tug Model 550, with motor drive, are new designs in the company's lines of towing tractors. Standard assemblies are capable of starting a load requiring 2,300 lb. of maximum draw bar pull. A heavy duty assembly will build the starting pull to 3,000 pounds.

The operator rides in seated position back of an automotive type steering wheel. The assembly employs self-energizing hydraulic brakes and can be supplied with pneumatic tires on detachable wheel rims. The engine driven assembly provides three speeds forward and one in reverse. The electric tractor mounts a four speed magnetic contactor with adjustable timed acceleration and controlled plugging.

If you write maker identify as IEN - 5216

VALVE . . Solenoid operated for line pressures to 5,000 pounds

Source: ATKOMATIC VALVE CO.
545 Abbott St., Dept. IEN, Indianapolis 25, Ind.



Bulletin 100

Line connections are threaded for ⅛ or ¼-in. pipe in this new direct lift stainless steel solenoid valve. Orifice diameter ranges from $\frac{1}{16}$ to $\frac{5}{16}$ in., depending on pressure requirements and the solenoid coil employed. Pressure is to 5,000 lb. with temperature to 150 deg. F. It is maximum at 2,500 lb. when temperature is as high as 400 deg. F.

The solenoid coil is single or double construction, paper wound or glass with silicone impregnation. The latter is recommended for services in temperatures exceeding 180 deg. F. Single wound coils will open the valve from its normally closed position with pressure maximum at 395 lb. on a $\frac{1}{16}$-in. orifice or 45 lb. on a $\frac{5}{16}$-in. orifice. In the double-coil design, a primary coil exerts high opening pressure for a short interval. Then the holding coil maintains the armature in open position. In the latter case, a relay is required to cut out the primary winding in order to prevent it from burning out. The double coil is sufficiently strong to open the valve against 5,000 lb. in the $\frac{1}{16}$-in. orifice and against 720 lb. when the orifice measures $\frac{5}{16}$ inch.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5217

FOR AIR REQUIREMENTS UP TO 640 CFM

Avoid long runs of piping. Joy WL-80 Air Compressors can be used right where the air is needed. Their extreme compactness permits installation in very restricted area.

Eleven models range from 15 to 125 HP, produce from 81 to 641 CFM. Pressures up to 125 psi (high-pressure units to 250 psi).

Your choice of drives, too: Direct, V-Belt, Flange-mounted. Single or two stage, air-cooled, force-feed lubrication. Write for detailed Bulletin A-56.

Consult a Joy Engineer

JOY

JOY MANUFACTURING CO., OLIVER BLDG., PITTSBURGH 22, PA.
IN CANADA: JOY MANUFACTURING CO. (CANADA) LIMITED, GALT, ONTARIO.

If you write maker identify as IEN - 5218

5411

"ONE MAN GANG"

When you see PORTELVATOR (R) (the handy Hamilton portable elevating table) doing the lifting and moving jobs which previously required the combined strength of three or more husky men you will know why so many present users call it a "one man gang."

(Prices start at $155.00*)
Get one—and start it to work in your operation.

WANT THE COMPLETE FACTS? Write for Bulletin No. 5411—Address The Hamilton Tool Company, 905 Hanover Street, Hamilton, Ohio.

IT'S A **Hamilton Tool**
USE IT WITH CONFIDENCE

*Prices subject to change without notice.

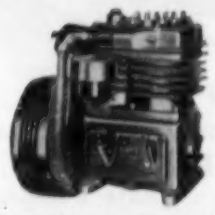
If you write maker identify as IEN - 5219

GET MORE PRODUCTION PER MAN HOUR

with the Help of Dependable Efficient

Curtis

Air Compressors

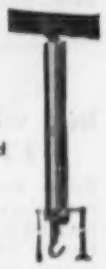


Available up to 320 cu. ft. Can be supplied base mounted up to 50 H.P. or tank mounted up to 15 H.P. Timken bearing equipped . . . precision built.

Air Cylinders and Hoists.

To lift, lower, push, or pull

Pendant air hoist is ideal for lifting or lowering—Bracketed Air cylinder can be mounted in any position for lifting, lowering, pushing or pulling.



For more information write to:

CURTIS PNEUMATIC MACHINERY DIVISION of Curtis Mfg. Co.
1941 Kienlen Avenue • St. Louis 20, Missouri

764

100 Years of Successful Manufacturing Experience

If you write maker identify as IEN - 5220

Carry Your Inspection to the Machine with Acme's New Portable

BENCH CENTERS

ONLY 18" OVERALL • WEIGHT ONLY 19½ LBS.

Use Magnetic or Standard Indicators Directly on the Bed Area

Easily sets on Angle Plates for Vertical or Angular Checks

Fits any 12" Surface Plate

Available with Fixed or Retractable Centers Full or Cut Down

Save Time and Money

Avoid Rejects

Speed Production

Order Now!

Drill Jig and Fixture Bushings • Roughness Comparison Specimens • Dowel Pins

Chamfer Micrometer Gages • Hardened and Ground Precision Parts • Flat Lapping

ACME INDUSTRIAL COMPANY
215 N. LAFLIN ST.
CHICAGO 7, ILLINOIS

If you write maker identify as **IEN - 5221**

REMOTE *Cylinder* CONTROL

with *Ledeen* POWER operated VALVES

Hand Valves

Foot Valves

Instant action of remotely located or automatically operated cylinders is made possible with the new and improved Ledeen Power Operated Valves. These disc-type valves are positive in operation, and are readily adaptable to a wide variety of pilot controls. Solenoid operated power valves are available as complete package units.

Ledeen Power Operated Valves are fast cycling, have few moving parts, and require very little maintenance. They are available from stock for quick delivery.

Write for Bulletin 1010.

VALVES • CYLINDERS
AIR-HYDRAULIC
PUMPS & BOOSTERS
VALVE ACTUATORS
AIR HOISTS

Ledeen Mfg. Co.
1602 San Pedro St.
Los Angeles 15, Cal.

If you write maker identify as **IEN - 5222**

Two Fuller two-stage compressors in a steel mill. Capacity each, 1660 c.f.m., 125 lb. pressure.

AIR ISN'T FREE!
but with FULLER rotary compressors IT NEED NOT BE COSTLY

Fuller Rotary Compressors are built to provide a lifetime of new machine efficiency. They're sturdy, dependable . . . and because they have a minimum of moving parts—rotor, bearings, blades—they require minimum attention. There are no valves to leak, no seats to grind, and blades automatically compensate for wear. No detail has been overlooked that makes for long-term, trouble-free service, at the lowest possible maintenance and operating costs.

Have a Fuller engineer show you how they pay off in dependable service and long life.

FULLER COMPANY—CATASAUQUA, PA.

Branch Offices
Chicago • San Francisco • Los Angeles • Seattle • Birmingham

C-233A—2059

Fuller PIONEERS OF HIGH-EFFICIENCY VANE TYPE ROTARY COMPRESSORS

If you write maker identify as **IEN - 5223**

Check Temperatures
Instantly... Accurately with *Alnor* TYPE 1500 PORTABLE PYROMETER

Wherever temperature readings are required—on the production line, in the laboratory or in the field—this sturdy precision instrument can bring you instant, accurate results.

Here's Why

It's Fast . . . in operation and quickly read. Precision movement designed to laboratory standards. Direct reading scale face is easily understood—no slide wires or conversion tables necessary.

It's Accurate . . . consistently to within ¾ of one percent under almost all variable conditions. Sturdy, protective case assures continued accuracy in toughest portable service. Ten scale ranges available, from 0-400° to 0-3000°F. Equivalent Centigrade scales available at no extra cost.

It's Portable . . . compact size, 6½"x6"x3", and light weight make this pyrometer highly portable and easy to use anywhere. Write today for complete details and prices. Illinois Testing Laboratories, Inc., Room 517, 420 N. La Salle Street, Chicago 10, Illinois.

Send for Bulletin on 1500 Pyrometer.

Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

If you write maker identify as **IEN - 5224**

CONNECTOR . . Junction box provides multiple electric outlets

Source: NATIONAL WIRE & CABLE CORP.
136 San Fernando Rd., Dept. IEN, Los Angeles 31, Calif.

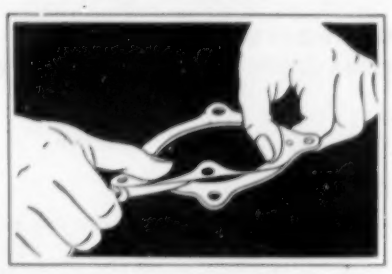
For power, light

Four outlets, in various arrangements of 2 and 3 wire T-slot and twist lock designs, are provided in the face of this new junction box. It is equipped with a heavy duty extension cord and plug for connection to an existing power outlet. It provides means to connect four appliances or lights at a point where they are needed. The extension cord is available in 15, 25, 50 and 100-ft. lengths. List price, depending on design, ranges from about $4 to $12 with a 15-ft. cord.

If you write maker identify as **IEN - 5225**

SHIM STOCK . . Laminated aluminum in sheets or shapes to specification

Source: LAMINATED SHIM CO.
Dept. IEN, Glenbrook, Conn.



It looks solid

Aluminum has been added to the company's lines of laminated shim stock in which the laminations can be peeled off to provide a required thickness. The stock is available in overall thickness from 0.015 to 0.125 in. and in sheet sizes to 20 by 48 inches. The laminations are bonded over the entire surface but can be peeled apart readily with a knife. The aluminum is not subject to corrosion or electrolytic action.

If you write maker identify as **IEN - 5226**

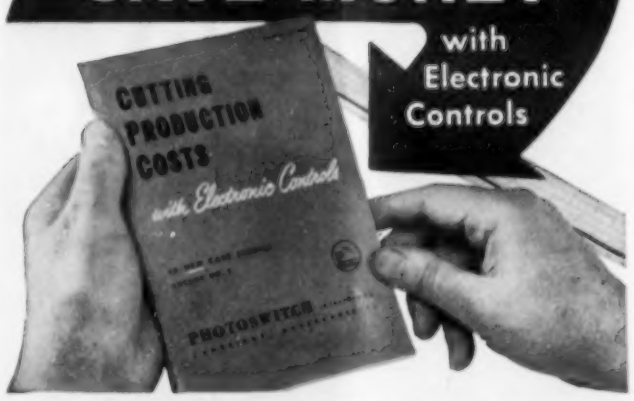
IBM punched cards can be placed in a new Transceiver, developed by International Business Machines Corp., 590 Madison Ave., Dept. IEN, New York 22, N. Y., for duplication on similar receiving equipment over a telephone or telegraph circuit to any distance away. The sending machine reads holes punched in the cards. Electronic circuits generate coded impulses representing each hole.

The impulses are transmitted over the circuit to actuate the receiving machine which punches exact duplicates of the cards at the sending end. After each card is completed, the transmitter sends the signal which checks on the accuracy of the data. The signal will "echo" back if the card has been punched correctly and will cause the transmitter to proceed to the next card. Rate of transmission is about 1,000 alphabet or numerical characters per minute.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 5227**

46 tested ways to SAVE MONEY with Electronic Controls



A completely revised edition of the handbook that has become the "bible" of electronic control for thousands of engineers and production executives.

Newly edited, with 46 new case studies showing how standard packaged electronic controls have solved many industrial problems you're likely to meet. It explains clearly and factually, without hocus-pocus, tested ideas for achieving new efficiency through "Electron-eered" counting, weighing, measuring, timing and cycling.

Send for your FREE copy now!

Photoswitch Incorporated
Dept P7-4, 77 Broadway, Cambridge 42, Mass.

If you write maker identify as **IEN - 5228**

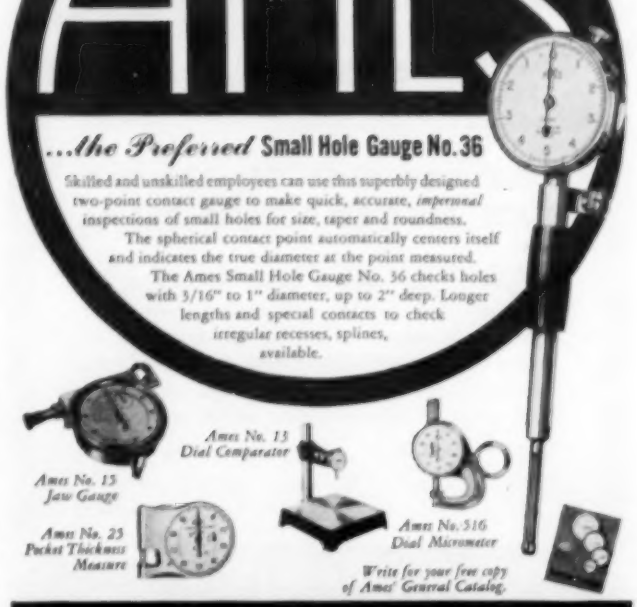
AMES

***...the Preferred* Small Hole Gauge No. 36**

Skilled and unskilled employees can use this superbly designed two-point contact gauge to make quick, accurate, *impersonal* inspections of small holes for size, taper and roundness.

The spherical contact point automatically centers itself and indicates the true diameter at the point measured.

The Ames Small Hole Gauge No. 36 checks holes with 5/16" to 1" diameter, up to 2" deep. Longer lengths and special contacts to check irregular recesses, splines, available.

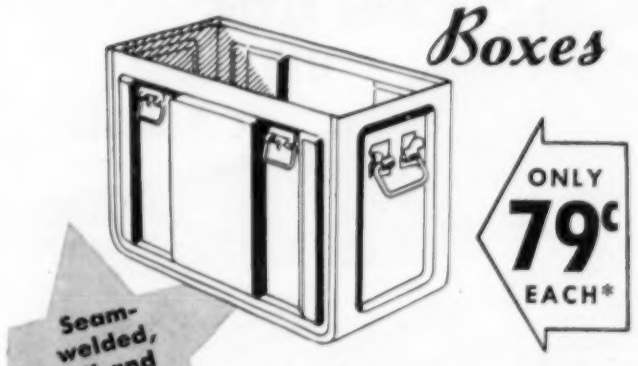


Write for your free copy of Ames' General Catalog.

Representatives in principal cities. **B. C. AMES CO.** *33 Ames Street, Waltham 54, Mass.*
Mfgr. of Micrometer Dial Gauges • Micrometer Dial Indicators

If you write maker identify as **IEN - 5229**

Steel* SHOP and TOTE *Boxes



*In quantity lots. Write for prices for quantity you need. Prices F.O.B. Michigan City, Indiana.

17½" long x 8" wide x 13" deep
(Inside Dimensions)

Why pay for 4 to 6 boxes and only get one? Thousands of manufacturers have used these boxes for years at great annual savings. You too can cut costs! Just tell us how many you need. We'll give you the lowest prices, fill your needs completely at savings up to 75%.

BARNES and SMITH CORPORATION
6521-A W. State Street • Milwaukee 13, Wis.

If you write maker identify as **IEN - 5230**

WANT MORE POWER IN LESS SPACE?

INQUIRE ABOUT GLOBE MINIATURE
HI-TORQUE ROTARY ACTUATORS

With dimensions of only 2" x 5¼" max., units have load capacities up to 2000 in. oz. torque. Voltages range from 6 to 100 V. Units are waterproof, meet military specs., are radio noise filtered, can stop and reverse at any position, are normally wired for dynamic braking, equipped with adjustable limit switch and follow-up potentiometer. Write today for complete information.

Globe *industries, inc.*
MOTORS • GEAR REDUCERS • GENERATORS • GOVERNORS • SERVOS
BLOWERS • FANS • ACTUATORS • SWITCHES • GYROS • VIBRATORS
1788 STANLEY AVE., DAYTON 4, OHIO

If you write maker identify as IEN - 5231

Precision Laboratory Measurement of
- Small quantities of gas or air flow
- Replacement for sight feed bubblers

DWYER SERIES 490 FLOWMETER

Accuracy—Readings are on-the-line—not approximations.

Easy to read—Light enters from all sides of the solid acrylic transparent body for easy reading. Tapered indicating tube precision drilled, reamed and polished.

Control Valve—Built-in.

Scales—Standard 0-2, 0-4 or 0-10 CFH. Air, 0-100 CC/Min. Water. Special ranges available in production quantities.

Models—Single or multiple units, surface mounting type.

Mounting Holes—To specification.

Fittings—⅛ SPT connections provided.

Dimensions—4" high x 1" square.

Ask for Complete Information

DWYER *Specialized* INSTRUMENTS and GAGES

F. W. DWYER MFG. CO. • 307 So. Western Ave., Chicago 12, Ill.

If you write maker identify as IEN - 5232

Nothing Like it on the Market!

★ **Saves supervisory time and trouble; serves *any* place**
Simply plug controller cord into wall outlet, plug apparatus cord and thermocouple into controller and set control knob at desired heat. No time-taking set up, no need for frequent or awkward readings.

★ **Assures uniform temperature; proved in practical use**
Indicates actual temperature *and* controls within close tolerances. Both heating and cooling cycles may be controlled. Several units in daily use by leading laboratories.

★ **Extra protection included at *no* extra cost**
Built-in thermocouple break protection (TCBP) cuts current from load in event of thermocouple failure. Dual pilot lights indicate control activity *and* power failure.

★ ***Low Priced*—saves over built-in or set-up controls**
With full 15-amp. rating and double range (50°-500°F. I/C and 0°-2000°F. C/A) Gardsman portable controllers have almost universal application. Always handy, reliable, efficient, economical.

★ **FEATURES**
Thermocouple Break Protection—dual pilot lights—2 plug-in flexible thermocouples color-coded by range—range selector switch—dust-proof auto-shunted indicator—ground connection—5-inch anti-parallax scale—compact case (12"x9"x7¾")—directions printed on instrument.

If your dealer can't deliver this new JE series promptly, phone our representative in your city or write direct (Bulletin JE-1). We can ship instruments immediately.

Model JE (on-off) Turns power off when control temperature is reached, on when temperature falls. On-off control differential is less than .006°.
Model JEL (on-off, high limit) Can be used as above or can shut off all power after control point is reached, until manually re-set. Auxiliary circuit can be used for alarm.
Model JEP (proportioning) maintains extremely close control . . . Indicating pointer rarely even moves from control point.

WEST Instrument CORPORATION

529 NORTH NOBLE ST. • CHICAGO 22, ILLINOIS • PHONE TAylor 9-6605

If you write maker identify as IEN - 5234

FASTENING . . Steel anchor studs driven by cartridge in portable tool

Source: RAMSET DIVISION
12117 Berea Road, Dept. IEN, Cleveland 11, Ohio

Construction, maintenance

Studs and pins, measuring ⅜ in. in thread or head diameter, can be driven through 1 in. of steel to provide holding power to 5 tons with this new Super-Power Jobmaster powder actuated tool. Nineteen designs of fastener and four powder loads are available to meet a range of conditions. The tool weighs a little under 8 lb. and measures 15 in. in length. It is designed for one or two-hand operation. It will set the studs or pins at the rate of one or more per minute.

A new shield, at the end of the gun barrel, permits locating fasteners to 1¼ in. from the edge of the shield. Quadrant markings assist in exact positioning. The tool stands upright on the shield when it is not in use. It is opened for loading or inspection with a quarter turn of the upper half of the assembly.. It is locked by a reverse quarter turn.

A positive safety prevents discharge until the tool is pressed firmly against the work surface in almost an exact 90-deg-position. The powder charge employs a plastic wad which acts as a gas check to prevent gas leakage down the gun barrel and to prevent spalling concrete into which a pin or stud is driven.

If you write maker identify as IEN - 5235

GAGE . . Electric actuator checks work with lights or gages

Source: FEDERAL PRODUCTS CORP.
1144 Eddy St., Dept. IEN, Providence 1, R. I.

For production use

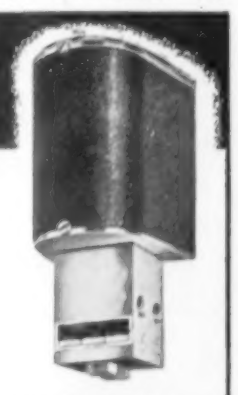
Eccentricator is new actuating element to open and close electrical circuits to tolerance lights or to apply with automatic electronic gages for measurement of eccentricity, squareness, run-out, straightness, wobble. Several of the units can be mounted side by side for multiple gaging on minimum 9/16-in. centers. Each unit measures 3⅞ by ½ by 1¾ in. and weighs 14 ounces.

Two pivoted levers are operated by the movable gaging spindle. They are assembled with the spindle, an adjustable tolerance screw and a pair of electrical contacts in the rectangular housing. Movement of the spindle raises one lever. It, in turn, raises the second lever to a position of maximum work piece size, including run-out. The first lever retains its original setting. The second lever is free to move, within the preset distance, between an adjustable limit screw and an electrical contact. This second lever touches the contact of the first lever and a work piece is rejected as "bad" if the run-out exceeds the preset tolerance.

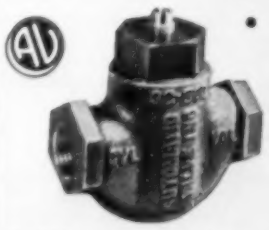
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5236

Solenoid VALVES



PILOT VALVES
3-WAY 4-WAY
For operating Master Valves and Small Cylinders



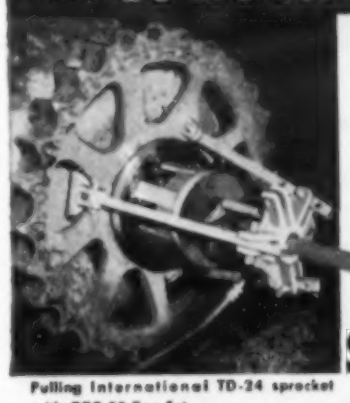
***Speed Control* VALVE**
Controls speed of Air and Hydraulic Cylinders

***3-Way and 4-Way* VALVES**
Pilot Operated
Sizes ¼" — ⅜" ½" and ¾"
Write for Bulletin

AUTOMATIC VALVE CO.
37421 GRAND RIVER AVE., FARMINGTON, MICH.

If you write maker identify as IEN - 5237

PULL SPROCKETS IN MINUTES WITH THE NEW OTC SPROCKET PULLER



Pulling International TD-24 sprocket with OTC 50 Ton Set.

OTC 50 TON Hydraulic Ram with Adaptors pulls or installs on the job or in the shop.

SAVE TIME, LABOR...REDUCE "DOWN-TIME"

OTC 50 Ton POWER-TWIN Hydraulic Ram . . . used for hundreds of tough jobs including the above.

Now the costly job of pulling Crawler-Tractor sprockets can be done in minutes by one man. Manufacturers approved sets are available for, Caterpillar, Allis-Chalmers and International Harvester . . . or a Universal Set to fit all three. If you have a 50 Ton OTC Ram, you need only the adaptors . . . three types of pumps available.

SEND FOR FREE FOLDER

OWATONNA TOOL COMPANY
371 Cedar Street • Owatonna, Minnesota

If you write maker identify as IEN - 5238

NOW!

HARDNESS-DIFFERENTIAL

built into seats of new UNION #603

No other Union has this differential!

In the new Rockwood Union #603, special heat treating of the male seat gives it a greater degree of hardness than the female seat. Result: *no galling in "making up" — longer service.*

Corrosion-resistant AIST molychrome steel seats are forged in place — double-locked under 100,000 and 400,000-pound pressure.

Other features: exclusive Rockwood cold forging process results in resistance to tough working conditions, permits absolutely interchangeable parts. Exclusive "Rockwoodizing" protects corrosion. For further details, write Rockwood Sprinkler Company, 40 Harlow Street, Worcester 5, Mass.

ROCKWOOD SPRINKLER COMPANY

If you write maker identify as IEN - 5239

DESIGNERS for COMPARATIVE AND ULTIMATE STRENGTH TESTS, ETC.

INSPECTION of PARTS AND ASSEMBLIES, ETC.

LABORATORY TESTING of SCREWS, SOCKETS, TAPS, LOCK NUTS, DRIVING BITS, HAIR SPRINGS, ETC.

PRODUCTION QUALITY CONTROL for DELICATE OPERATIONS, ASSEMBLY OF FRAGILE MECHANISMS OR INSTRUMENTS, FOR FASTENERS IN PLASTICS AND LIGHT METALS.

Torque Testing FIXTURE

A universal fixture with 1000 uses. Holds driver in accurate alignment; in instrument bearings. Provides rapid engagement with test sample...torque is applied and measured with Sturtevant Torque Wrench.

Model TTF¼ *Capacity 0-200 in. lbs.*
Model TTF½ *Capacity 0-150 ft. lbs.*

Write for Bulletin TF

P.A. STURTEVANT CO. ADDISON QUALITY ILLINOIS

If you write maker identify as IEN - 5240

GRIGOLEIT keeps you in TRIM

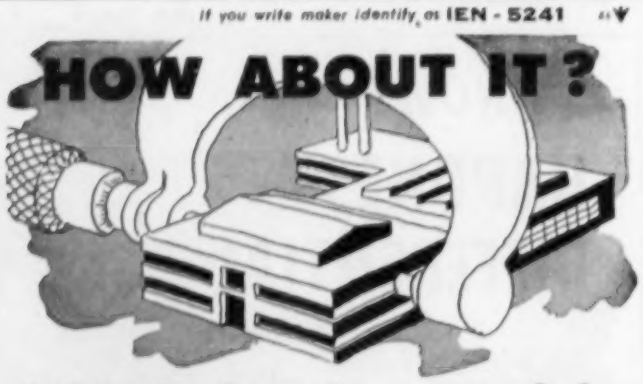
The demand for GRIGOLEIT small, plated stampings and finished zinc die-castings for appliance trim grows and grows. That's because manufacturers everywhere have discovered the outstanding sales appeal GRIGOLEIT experience and facilities bring to their product. You'll find GRIGOLEIT offers greatest service and economy, too. Contact GRIGOLEIT today.

Here is a sample of quality GRIGOLEIT molded plastics. A complete line is available for your selection.

THE GRIGOLEIT COMPANY
"Serving Industry for Twenty-five Years"
742 E. MONROE ST. DECATUR, ILLINOIS

If you write maker identify as IEN - 5241

HOW ABOUT IT?



is YOUR plant clean enough for precision defense production?

Model 218

Don't sabotage your plant facilities with dirt and debris. Clean plants measure up to defense production standards.

Send for important Doyle Vac-It information today. There's no obligation.

Doyle VACUUM CLEANER CO.
2235 Stevens St., S. W. Grand Rapids 7, Michigan

If you write maker identify as IEN - 5242

IMPORTANT NOTICE

The Genuine MAUSER VERNIER CALIPER

IS NOW MADE OF STAINLESS STEEL THROUGHOUT

The fine finish will not tarnish or deteriorate in many years of use.

NEW #101

$14.75 POSTPAID

... AND THE FOLLOWING IMPROVEMENTS HAVE BEEN ADDED

★ A SPECIALLY LONG VERNIER to read the thousandths
★ A HARDENED PHOSPHOR-BRONZE adjustable gib retains accuracy
★ 3 EASY READING SCALES • 1/1000" • 1/128" • 1/10 mm. in back

Request Illustrated Folder showing complete line of MAUSER Toolmakers Calipers, Height gages, Bevel Protractors and Tool Stands.

Dealers: Here's a real profitable line!

GEORGE SCHERR CO., INC.
COMPLETE LINE OF PRECISION INSTRUMENTS
200-EN LAFAYETTE ST. • N.Y. 12, N.Y.

If you write maker identify as IEN - 5243

PRESS TOOLS . . Die blanks of copper base alloy in stock sizes

Source: AMPCO METAL INC.
1745 S. 38th St., Dept. IEN, Milwaukee 46, Wis.

Machines readily

The company announces availability of its Grade-24 aluminum bronze alloy, in sand cast and centrifugally cast form, in a range of solid round, rectangular and ring sizes. The stock blanks represent further development of the Grade-24 aluminum bronze available in specified castings for metal drawing and forming tools, previously described IEN-7603-48.

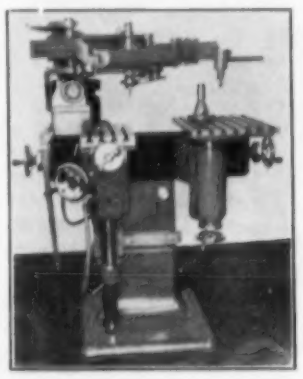
Solid rounds range from 1 to 5 in. in diameter and either 6 or 12½ in. in length as cast. Rectangles range from ½ to 4 in. in thickness and from 1 to 4 in. in width. The lengths also are 6 or 12½ in. in the as-cast form. Rough bored centrifugally cast rings range from 1 to 12½ in. in inside diameter and from 4 to 20 in. in outside diameter. Thickness is 1½ to 3½ inches. One face of the cast ring is machined.

The metal is particularly suited for drawing, forming, bending and wiping in working stainless steel. It is low in frictional resistance and also is non-galling and non-loading. It will not leave scratch or draw marks on the finished work.

If you write maker identify as IEN - 5244

MILLING . . Pantograph machine to cut molds and dies to a master

Source: J. ARTHUR DEAKIN & SON
150-28 Hillside Ave., Dept. IEN, Jamaica 32, N. Y.



Made in England

Milling cutters, to ⅜ in. in diameter, can be operated by the spindle in this new Model 3 die sinking machine. A hand adjustment permits balancing the pantograph to any ratio in any position. The casting carrying the pantograph is designed to provide maximum work area for each ratio. A lead screw, on the copy table, provides longitudinal feed the same as on the work table.

Distance from the top of the work table to the cutter point, with the pantograph horizontal, is 14¼ in. with the table in its lowest position. It is 7⅞ in. with the table in line with the top of the column. Vertical feed for the copy holder is 8½ inches. The work table measures 8 by 14 in., has longitudinal feed of 7⅜ in. and cross feed of 6 inches. Longitudinal feed of the copy table is 7⅞ inches. Maximum distance between the center of the work table and the copy table is 26 inches.

The machine will take work weighing to about 1,000 pounds. It provides a ratio between master and work of 1.5 to 10 to 1. Fourteen spindle speeds range from 475 to 9,500 rpm. The spindle rides in standard ball bearings. A balancing device eliminates the need for a weight arm.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5245

WHICH V-BELT is best for you?

If the correct size of endless V-Belt is not readily available, or if you have to tear down machinery to install, then the best belt to use is open-end V-Belting fastened with

ALLIGATOR V-BELT FASTENERS

★ In this way you can make up V-Belts in *any length* to fit *any drive* the fast economical way—V-Belts that perform exceptionally well.

★ In contrast to link-type belts these ALLIGATOR fastened V-Belts have just *one* strong joint . . . *stretch and follow-up maintenance are reduced to a minimum.*

ALLIGATOR INTRODUCTORY V-BELT DRIVE UNITS

contain V-Belting, Fasteners and Tools—everything you need in one compact package to make up V-Belts quickly. Available in sizes A, B, C & D.

Ask for Bulletins V-215 and V-216
Order From Your Distributor

FLEXIBLE STEEL LACING COMPANY
4610 Lexington Street, Chicago 44, Illinois

If you write maker identify as IEN - 5246

CONTROLS . . Pressure transducer converts fluid pressure to ac. voltage

Source: NORTH AMERICAN INSTRUMENTS INC.
2420 N. Lake Ave., Dept. IEN, Altadena, Calif.

For precision use

Model GP-8 is a new pressure transducer suited for both static and dynamic measurements. Dynamic response is sufficient for most measurements involving transient pressure phenomena. Natural frequency ranges from 2,000 cps. at the lowest range to 10,000 cps. at the highest.

Construction employs a pressure sensing diaphragm, integral with the steel body, potted electric pick-off elements that thread into the body. Metal surfaces are finished with electrolized chromium for resistance to corrosion and wear. Weight is 12 ounces. Electrical characteristics are the same as for Model DP-7, previously described IEN-2694-54. Maximum input is 30 volts at 3,000 cps. Full scale output is 40 millivolts per volt input in bridge circuit operation.

If you write maker identify as IEN - 5247

METALS . . Deep drawn aluminum rod and bar for product machining

Source: HARVEY ALUMINUM
Dept. IEN, Torrance, Calif.

Technical data upon request

Deep drawing is employed under high pressure to "work" this new aluminum rod and bar stock and produce a new metallurgical structure in the metal. The structure is characterized by uniformity in grain composition and size as well as uniformity in hardness for excellent machining characteristics. The deep drawing also sizes the stock section to close tolerances. Each finished piece is stretcher straightened to relieve internal stresses set up during heat treating.

If you write maker identify as IEN - 5248

CORROSION PROOFING . . Applicator spreads cold mastic over a pipe

Source: ROYSTON LABORATORIES INC.
Dept. IEN, Blawnox, Pittsburgh 38, Pa.

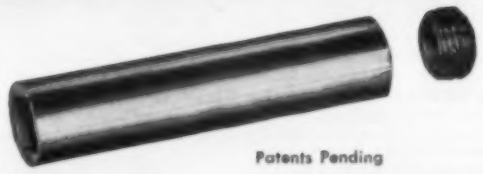
Made in three sizes

Roskoter is a new cylindrical assembly made in two parts to fit over a pipe line and to provide storage space for cold corrosion proofing mastic. The housing can be fitted with interchangeable coating shoes, lined with carpets at each end. Adjustable draw bands control film thickness. One man can pull the equipment over small pipe. Two can handle it on pipe to 12 in. in diameter. The mastic is spread evenly to cover the pipe surface. None is spilled.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

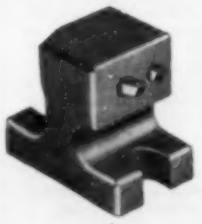
If you write maker identify as IEN - 5249

How SQUARE HOLED SLEEVES SPEED UP TOOL-MAKING!



Patents Pending

One of the most difficult problems in tool making can be solved easily and quickly with Sturdy Square Holed Sleeves. The perfection of broached square holes can be had in boring bars, milling cutters and many other applications at a small fraction of the cost of imperfect hand-made square holes. The sturdy Square Holed Sleeve consists of a round sleeve with a perfectly square hole broached through the center. This hole is tapped at one end to receive a back-up screw which is furnished with the sleeve. The sleeve can be sweated or pressed into a drilled and reamed hole to make a perfectly square accurate hole in a very few minutes.



The sturdy Square Holed Sleeve will save you many hours and many dollars in the making of boring bars, tool holders and other tools requiring square holes.

SLEEVES MADE IN FOLLOWING SIZES:
3/16", 1/4", 5/16", 3/8", 7/16", ½", ⅝", ¾", 1"

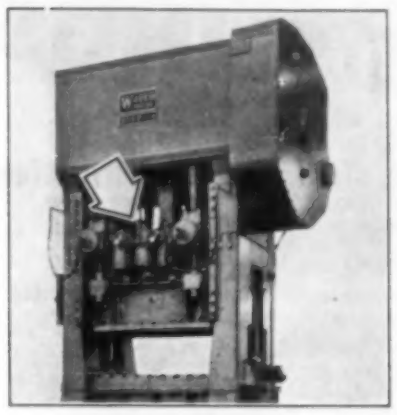
Write for Literature

STURDY BROACHING SERVICE
23516 TELEGRAPH ROAD • DETROIT 19, MICH.

If you write maker identify as **IEN - 5250**

PRESS . . Air-hydraulic attachment regulates the blank holder pressure

Source: FEDERAL MACHINE & WELDER CO.
Dept. IEN, Warren, Ohio



Available to order

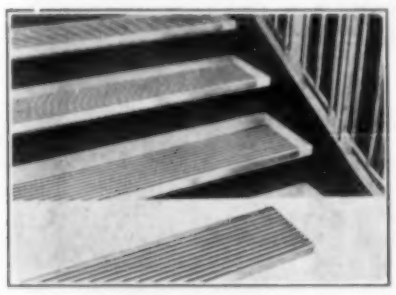
New attachment applies on a double acting press, in the connections between the blank holder and its operating cranks, to apply a constant independently adjustable pressure at each of the four corners of the blank holder. The new unit acts as a safety overload protection and also adjusts pressure evenly over the blank to prevent excessive pull in one corner.

By checking the setting for any given job it is possible to reset for best results on duplicating runs. At the same time the attachment provides a positive safety overload protection, if two blanks are put into the press in error. It will detect this fact and stop the press before it or the dies can be damaged. The attachment is shown in place on a Warco press. It is known as the Warco Hydro-Pneumatic force adjustment device.

If you write maker identify as **IEN - 5251**

FLOORS . . Metal safety treads made of aluminum with abrasive strips

Source: WOOSTER PRODUCTS CO.
Dept. IEN, Wooster, Ohio



Permanently safe

Eleven ribs, filled with bonded abrasive grain, and a 1⅛-in. front edge lip make up this new Stairmaster tread. The body, with which the ribs are integral, is made of aluminum. Dimension front to back is 9 inches. The tread is supplied in specified lengths, 6 in. less than the existing stair tread. It applies over worn treads of any material after the worn area has been leveled with mastic. The unit is held in place by screws or combination screws and expansion anchors. It is suited for use indoors or outside.

If you write maker identify as **IEN - 5252**

Your problems in lubricating, where extreme temperatures are involved, might be solved with a new solid film lubricant developed by EverLube Corporation, 6940 Farmdale Ave., Dept. IEN, North Hollywood, Calif. This lubricant is recommended in a temperature range from minus 60 to plus 1,000 deg. F. The company maintains custom processing plants for application. Lubricant is fused on specified bearing surfaces.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 5254**

FASTENINGS . . Thread inserts and tools assembled in a repair kit

Source: HELI-COIL CORPORATION
1476 Shelter Rock Lane, Dept. IEN, Danbury, Conn.

For damaged threads

Kit No. 34CS is a new unit carrying an assortment of 25 of the company's wire screw thread inserts in four commonly used sizes together with four inserting tools, insert extractors and Heli-Coil taps. A printed direction sheet is secured to the inside of the cover. Photographs illustrate the thread repair method and a chart indicates the position of tools and inserts in the kit. There are fifty 5/16-18 inserts and 25 each of 3/8-16, 7/16-14 and 1/2-13.

If you write maker identify as **IEN - 5255**

BORING . . Short necked cutters for precision holes, 1/16 to 9/16 inch

Source: BOKUM TOOL CO.
14775 Wildemere Ave., Dept. IEN, Detroit 38, Mich.

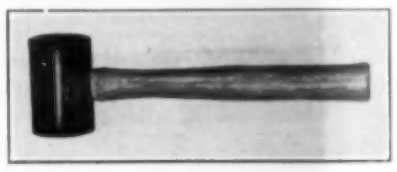
Tailor made at stock prices

Twenty-five sizes are included in a Style A for through boring and a Style B for bottoming work in this new line of short necked boring cutters. Both styles are available in high speed steel or in carbide tipped construction. In each case, the neck length of the tool is made only a little longer than the boring depth for maximum rigidity. Application is in boring small holes in work on screw machines and production boring machines.

If you write maker identify as **IEN - 5256**

HAMMER . . Soft head mallet will not mar a finished surface

Source: NEW PLASTIC CORP.
1026 N. Sycamore St., Dept. IEN, Los Angeles 38, Cal.



For "soft" pounding

Four sizes and four hardnesses are available in this new line of Nupla soft head mallets. The entire head is made of Nuplaflex plastic which has the property of recovering its shape when dented by a hard blow. It will not chip, flake or mushroom. The four hardnesses, soft, medium, tough and hard, are distinguished by individual colors. The wood handle terminates inside the head so the hammer can be used on any surface without danger of marring.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 5258**

BOSTITCH P4
STAPLING PLIER
WORKS WHERE OTHERS WON'T

Thin clinching blade → slips easily into tight places

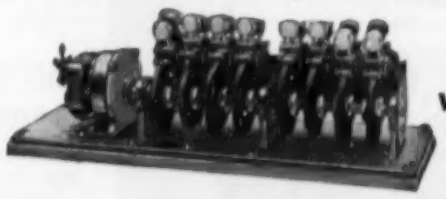
In assembly operations . . . in sealing bags, cartons, corrugated wrappings . . . in making up containers . . . the Bostitch P4 Stapling Plier is a fast-fastening favorite. Loads quickly and easily . . . clinches staples securely with little effort . . . stands up under long, continuous use. Three models; for light, medium and heavy wires, with leg lengths from 5/32" to 9/16."

Write for Bulletin 222. Bostitch **845** Mechanic Street, Westerly, R. I.

FASTEN IT BETTER AND FASTER WITH **BOSTITCH** STAPLERS AND STAPLES

If you write maker identify as **IEN - 5259**

8 MILLION Automatic Operations without failure*



with

STALEY TIME CYCLE CONTROLLERS

Staley Time Cycle Controllers give you exact, automatic control for sequence timing of electric circuit operations . . . eliminate the need for time delays and other complicated electrical equipment. Accurate, dependable, trouble-free service is assured by the use of positive-contract Staley Metallic Mercury Switches. Lightweight, rugged design *plus* ample power for continuous long period operation. Write today for descriptive bulletin. Specify Dept. IEN-405.

* Constant, *uninterrupted* service for periods of five years or longer attest to the trouble-free performance of Staley Time Cycle Controllers.

ELECTRIC SWITCH CORPORATION
1304 E. Eleventh Street • Columbus, Indiana

If you write maker identify as **IEN - 5253**

Helinews FROM HELIPOT TECHNICAL INFORMATION SERVICE

Write today for your FREE copy of this technical paper, reprinted from Product Engineering: Annual Handbook of Product Design for 1954.

The Precision Potentiometer as a Voltage Divider

By H. A. Schmidt
Sales Engineer,
Helipot Corporation

Write for Data File No. 512

Helipot *first in precision potentiometers*

Helipot Corporation/South Pasadena, California
a division of BECKMAN INSTRUMENTS, INC.

If you write maker identify as **IEN - 5257**

Look to Morton FOR FIXTURE CLAMPS AND FIXTURE DETAILS

MORTON MACHINE WORKS
2421 WOLCOTT STREET • DETROIT 20, MICHIGAN

If you write maker identify as **IEN - 5260**

"Hamilton Watch Co. counts on AMF De Walt for all maintenance!"

says Mr. Moses Good, Asst. Maintenance Engineer, Hamilton Watch Company, Lancaster, Pa.

"Our 2 De Walts do all our boxing and crating, and make all the work benches, cabinets and other furniture for our many departments. De Walt® is really versatile, we cross-cut, miter, bevel, compound miter and even do routing jobs sometimes. It's tops for all-around, all-purpose maintenance."

With one low-cost De Walt you'll be able to do just about any maintenance job—quickly ...safely...accurately. Takes up little space—takes the place of many machines.

Send for catalog to AMF De Walt Inc., Dept. IEN-54-5, Lancaster, Pa.

De Walt Inc. Lancaster, Pa.
DE WALT POWER SAWS
In Canada: De Walt Canada Ltd., Guelph, Ontario

Subsidiary of AMERICAN MACHINE & FOUNDRY COMPANY, New York

If you write maker identify as **IEN - 5261**

Severance TOOL INDUSTRIES INC.

740 Iowa Avenue • Saginaw, Michigan

If you write maker identify as **IEN - 5262**

Designed not only for safety but also economy . . .

CLARK's new EXPLOSION-PROOF Carloader

Clark's electric Explosion-Proof Carloader was specifically designed to meet the rigid requirements of Underwriters' Laboratories, Inc. It was the first lift truck to receive Type EX, Class I Group D approval. It is safe for operation in atmospheres containing explosive fumes and vapors, such as gasoline, lacquer, propane.

This truck was not merely modified to meet these rigid requirements—it was engineered from the ground up. Although rated at 3, 4, or 5000 lbs. capacity, its frame is all-welded, integral unit plate steel comparable to those required for much heavier loads. Forks are solid bronze; bumper plates are wooden.

In addition to *Safety*, the new Explosion-Proof Carloader provides outstanding economy and battery efficiency. Like *all* Clark electrics, it outperforms other comparable equipment—works a longer cycle without recharging batteries. Call your local Clark dealer (listed in the Yellow Pages) for details. Or write us direct.

Industrial Truck Division
CLARK EQUIPMENT COMPANY
Battle Creek 49, Michigan

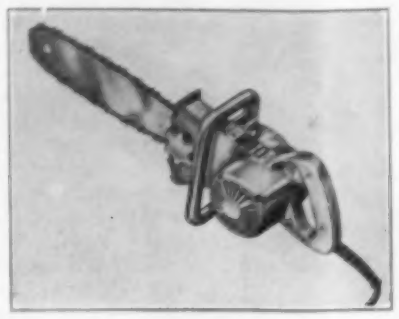
CLARK EQUIPMENT

☐ Send details on "EX" Carloader
Name _____
Firm Name _____
Street _____
City _____ Zone ____ State ____

If you write maker identify as **IEN - 5264**

WOOD WORKING . . Chain saw mounts motor driven 14 in. cutter bar

Source: SKIL CORPORATION
5039 Elston Ave., Dept. IEN, Chicago 30, Ill.



About $140

Model 605 is the new designation for the company's 14-in. chain saw, previously described IEN-7097-53. Drive is by a universal motor, as in the previous design, for operation on 110, 220, or other special voltage as specified. Control centers at an enclosed double-pole momentary contact switch. Free chain speed is 1,400 fpm as it rides around its support.

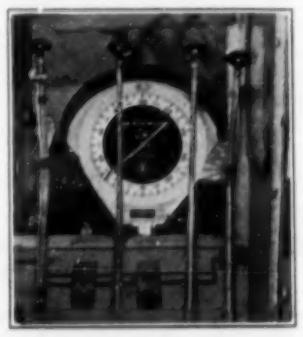
Standard equipment includes a chipper chain, package of repair parts, chain sharpening file and handle, and a three-wire cord and connector. Overall length is about 28 inches. Weight is 16½ pounds. The chain is supplied in a closed loop that does not have to be riveted by the user.

A push button oiler is built in to lubricate the chain while it is cutting. The spike teeth on each side of the cutter bar angle upward so the saw can slide down the work as a cut progresses. The teeth dig in when upward leverage is applied to the handle to accelerate the cutting action.

If you write maker identify as **IEN - 5265**

SIGNALING . . Weight indicator protects a crane against overloading

Source: MARTIN-DECKER CORPORATION
3431 Cherry Ave., Dept. IEN, Long Beach 7, Calif.



Shock protected

Load rating has been increased to 100 ton, from a maximum of 25 ton in the indicator previously described IEN-2103-54, by this new Type S-12 assembly. It applies on any type of crane or overhead hoist. Its actuating hydraulic cylinder mounts at the dead end of the hoisting cable. The indicating dial is located at the operator's position. Connection between the two is by means of a reinforced flexible hose.

The operator can watch the dial, as he picks up a load, to determine whether or not he is within safe limits. Accuracy is guaranteed within 1 per cent of maximum dial reading.

If you write maker identify as **IEN - 5266**

Ask M. W. Kellogg Co., Box 469, Dept. IEN, Jersey City 3, N. J. for information on the new corrosion resistant diaphragm, with metal embedded stud, for use in a Saunders patent valve. The diaphragm is made of Kel-F plastic, the company's chemically inert material. It is good for pressure to 150 lb., temperature to 300 deg. F. Flex life is to 100,000 cycles in standard operation.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 5267**

There is NO QUESTION about your metal cleaning and conditioning results

N.C.Co.
METALPREP
GALVAPREP
LYFANITE
PREP-PIK-L
PREP-N-COTE
Metal Conditioning
Rust Removing
Phosphatizing
products for
STEEL, ALUMINUM, ZINC, CADMIUM, etc.

when you use the

PREP PRODUCT

before painting that is suited to your individual requirements . . . We have the products and the technical knowledge to solve any specific pre-painting problem, assuring you higher quality at present cost or equal quality at lower cost.

Send for Bulletin on product in which you are interested.

● We have available the materials and processes for any Government Specification relating to metal treatment.

NEILSON CHEMICAL CO.
MANUFACTURERS OF METALPREP

7662 Tecumseh Road Windsor, Ontario | 6584 Benson St., Detroit 7, Mich. | 3411 Union Pacific Ave. Los Angeles 23, Calif.

If you write maker identify as **IEN - 5268**

WICKWIRE ROPE SLINGS

in braided and single part construction

Braided slings made by Wickwire give you these advantages:

- Extreme flexibility
- Non-kinking properties
- Better conformation to irregular surfaces
- More even load distribution
- Will not take a permanent set

Write or call our nearest sales office for full details.

THE COLORADO FUEL AND IRON CORP.—Abilene (Tex.) • Denver
Houston • Odessa (Tex.) • Phoenix • Salt Lake City • Tulsa
PACIFIC COAST DIVISION—Los Angeles • Oakland
Portland • San Francisco • Seattle • Spokane
WICKWIRE SPENCER STEEL DIVISION—Boston • Buffalo • Chattanooga
Chicago • Detroit • Emlenton (Pa.) • Philadelphia • New Orleans • New York

WICKWIRE ROPE
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL AND IRON CORPORATION

If you write maker identify as **IEN - 5269**

GOOD NEWS *FOR GLOBE VALVE USERS*

FAMOUS OSTLIND VALVES
now called
"GYROSEAL"
are back

Thousands of satisfied users report their original Ostlind Valves still on the line after years of exceptional use. GYROSEAL Valves retain the exclusive patented features. The disc revolves freely, keeping particles in suspension while the disc gently laps the seat for perfect closure.

Materials now used in GYROSEAL Valves assure trouble-free use not only in steam lines but also where the most corrosive fluids are involved.

Write for Fully Descriptive Brochure

THE RICHMOND FOUNDRY & MANUFACTURING COMPANY, INC.
DEPT. B, RICHMOND 20, VIRGINIA
Exclusive Producers of the GYROSEAL Valve

If you write maker identify as **IEN - 5270**

A.C.M.I. BORESCOPES

for close-up visual inspection of internal surfaces and hidden parts

A.C.M.I. Borescopes are available in 4 angles of vision (as above)—in diameters of .120" to 4.00"—in lengths of 4" to 720". Special models for special problems.

A.C.M.I. Borescopes permit close-up visual examination of interior areas and surfaces not otherwise visible. They save time and money, and prevent costly dismantling. • Each Borescope is a compact, self-illuminated industrial telescope of highest quality, employing a precision optical system, that produces a flat visual field. Lens systems are fully corrected for color, spherical aberrations, and coma, with all lens surfaces coated to increase light transmission.

Write for free informational folder, or tell us your problem.

American Cystoscope Makers, Inc.
1241 LAFAYETTE AVENUE NEW YORK 59, N. Y.

If you write maker identify as IEN - 5271

5 BIG POINTS IN YOUR FAVOR

New TYGON 277 RACK COATING

1 GREATER THICKNESS
Five mils per dip
2 HIGHER SOLIDS CONTENT
32.5 to 33.5% solids
3 SELF-ADHERING
No primer required
4 AIR-DRYING
No baking needed
5 QUICK-DRYING
One hour between dips

Plastics and Synthetics Division

Tygon 277 Air-Dry Rack Coating means less handling time, more plating cycles, lower plating costs. Order a trial gallon today.

272D

Plastics and Synthetics Division
U. S. STONEWARE CO.
AKRON 9, OHIO

If you write maker identify as IEN - 5272

S.S.White
PLASTIC CLOSURES
—the inexpensive way to protect valuable parts during shipment

Use them to—
- Protect threads
- Keep out dirt and moisture
- Seal in lubrication or hydraulic fluids

S.S.White plastic plugs and caps can save you thousands of dollars in damage, complaints and rejections – at the cost of only a few pennies! Use them to cover openings and fittings before shipment. They're quickly and easily applied – and won't shake loose during transit.

They're available in both threaded and unthreaded types and in a range of sizes and styles to meet every need.

LET US QUOTE YOU ON YOUR REQUIREMENTS

We can quickly fill your order from stock and are prepared to make up special sizes when required.

GET FULL DETAILS

Bulletins P-5203 and P-5312 have full information. Write for free copies.

THE S.S.White PLASTICS DIVISION
DENTAL MFG. CO.
Dept. NP, 10 East 40th St.
NEW YORK 16, N. Y.
Western District Office • Times Building, Long Beach, California

If you write maker identify as IEN - 5274

GRINDING . . Universal machine with double end swiveling headstock

Source: NORTON COMPANY
36 New Bond St., Dept. IEN, Worcester 6, Mass.

Simplified setup

A dog drive plate, for conventional grinding, or a 5-in. D-1 camlock nose, to take a mounting chuck or fixture, can be presented interchangeably by swiveling the headstock of this new 12-in. Type-U4 grinding machine through 180 degrees. The headstock is a combination live and dead center type. The chuck will not rotate when work is being ground on dead centers. A 1¼-in. through hole in the spindle permits working on long shafts. Standard construction includes a combination lever and hand wheel operated footstock. Work speed range is 40 to 400 rpm., in stepless progression, upon turning a dial that governs the ac. rectifier controlled headstock motor.

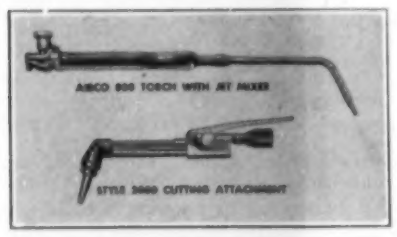
The grinding wheel head is equipped with two swivel mountings, one for the wheelhead itself to regulate wheel angle with relation to the work and the other, located below the wheel feed mechanism, to regulate the angle at which the wheel is fed into the work. Both swivels are graduated between 0 and 90 deg. on each side of zero position. Adjustments can be made independent of one another.

Change can be made quickly, between internal and external grinding, by positioning the hinged bracket internal grinding spindle that is mounted on the side of the main wheel head. It is not necessary to swivel the wheel assembly for internal grinding. Pumps and motors are mounted accessibly. Table ways are pressure lubricated from an outside reservoir. The coolant tank has a ramp outlet to assist in cleaning. The machine is wired in accordance with JIC Electric Standards. A power wheelhead rapid traverse positioning mechanism can be specified. Electric controls are assembled in an elevated enclosure.

If you write maker identify as IEN - 5275

CUTTING . . Acetylene torch and attachments for steel to 8 inches

Source: AIR REDUCTION SALES CO.
60 E. 42nd St., Dept. IEN, New York 17, N. Y.



Bulletin ADC 837

New attachments, one to cut steel to 6 in. in thickness and a second for steel to 8 in., have been developed for use with the company's Style 800 general purpose oxy-acetylene torch. A new jet mixer also is available to handle welding and heating tips in a range of sizes. Rubber sealing rings on the connections provide gas tight seals with hand tightening. No wrench is required for tip changing. A diaphragm type valve controls cutting oxygen. The mixer in the cutting attachments can be removed for cleaning or replacement should this be required.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5276

the GRAVELY does more Maintenance Jobs Better!

Gravely Tractor With Sickle Mower Attachment

Grounds upkeep and maintenance problems are solved quickly, easily and BETTER when you use the powerful 5-HP Gravely Tractor! . . . 21 tools for year-round use with seasonally selected attachments, quick change from job to job in minutes! Only the Gravely does so many jobs so well!

All-Gear Drive, Power Reverse. Institutions-tested for 32 years.

Ask for your copy of FREE Gravely catalog, "Power vs. Drudgery." See how you can do MORE jobs faster and better

GRAVELY TRACTORS, INC.
BOX 540 DUNBAR, W. VA.

If you write maker identify as IEN - 5277

SOUTH BEND
HANDLEVER BED TURRET

Use this practical attachment and efficiently handle repetitive operations on your engine lathes. Quality-built and extremely accurate — indexes automatically (±.0005" at 4" from turret face). Hardened, ground and superfinished index pin. Automatic feed stops. Effective slide travel 4". Holes for ⅝" or ¾" shank tools.

This is just one of 165 attachments and tools designed for South Bend Lathes. *Write for Attachment Bulletin 5321.*

Size Lathe	Catalog Number	Factory Price
9"	CL1611N	$273
Light Ten	CL1611K	280
10"	CL1611R	286
13"	CL1611T	308

SOUTH BEND LATHE
SOUTH BEND 22, INDIANA
Building Better Tools Since 1906

If you write maker identify as IEN - 5278

Here's how to SAVE TIME in SETTING-UP and KEEPING your MACHINES LEVEL

Fast
Accurate
Self-Aligning
Machine Leveler

Empco JACK

Empco Jacks enable you to meet hurry-up demands for relocation of machinery by giving you the fastest, easiest, most accurate machine leveling ever known: you simply raise or tilt machine sufficiently to allow the Empco Jacks to be slipped under base. The number of jacks required depends on weight of machine and size of base. Once set on Empco Jacks, the entire operation of leveling and maintaining equipment level is quickly done. By applying a wrench to the "hex" head of adjusting screw, an adjustment is obtained either up or down until your level indicator reads "zero." Write for specifications and prices today.

Vibration absorbing mounting pads increase machinery life.

EMPCO PRODUCTS

THE ENTERPRISE MACHINE PARTS CORPORATION
2737 JEROME AVENUE • DETROIT 12, MICHIGAN

If you write maker identify as IEN - 5279

MAKE FAST PERMANENT REPAIRS ON LEAKING FAUCETS, VALVES

REPLACE Worn Seats with Endurable Bronze in a few minutes, STOP WASTE...SAVE MONEY

With an Economy Kit, you can replace worn and cut seats on valves, faucets and bibbs for a few cents—stop leaks for good. Simple—easy to use—Economy Kits and Seats permit professional repairs—and waste permanently. Your money back if not satisfied. Write for illustrated circular and price list.

Economy VALVE SEAT CO.
1438 N. Keating Ave. Chicago 51, Illinois

If you write maker identify as IEN - 5280

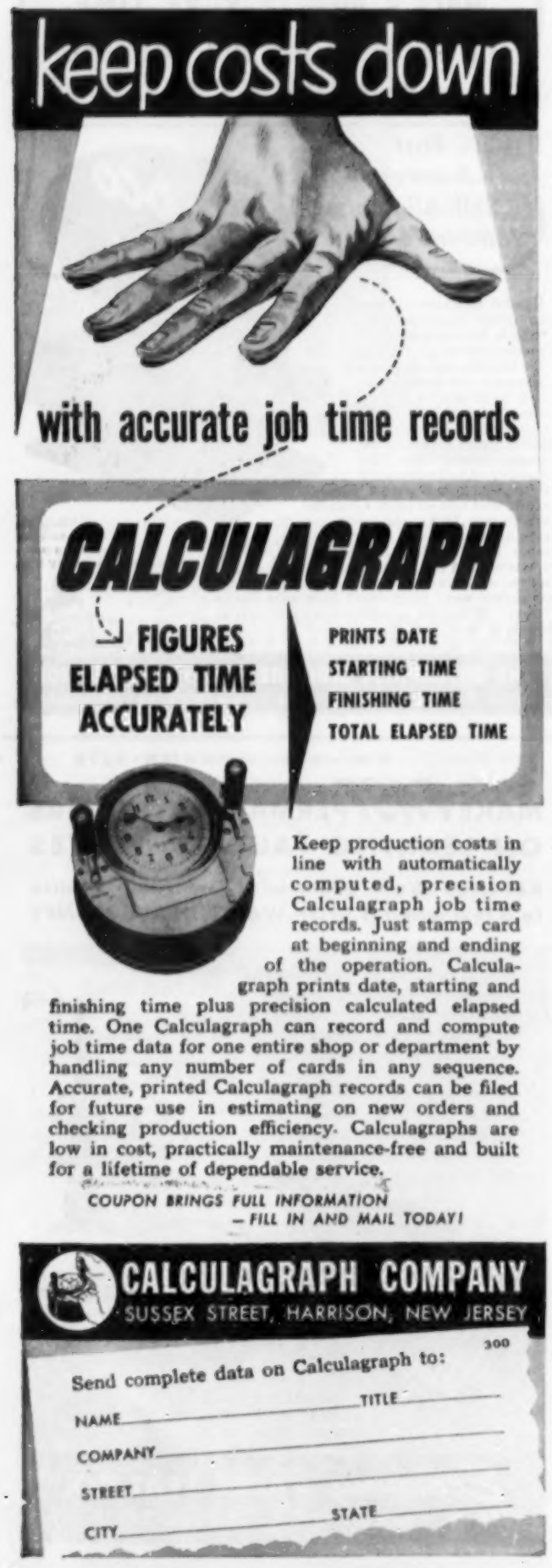
Lined with pure Tungsten Carbide (BORIUM).
Outlasts 300 ordinary cast iron nozzles.
Holds orifice size.
Retains high velocity, cleaning ability.
Saves compressed air.
Resists cutouts.
Eliminates frequent changes.

Guaranteed 300 HOURS when cleaning with sand, most common abrasives.

Standard screw and flange types. Special types made to order. Send blueprint and write for folder.

STOODY COMPANY
11930 East Slauson Avenue, Whittier, California

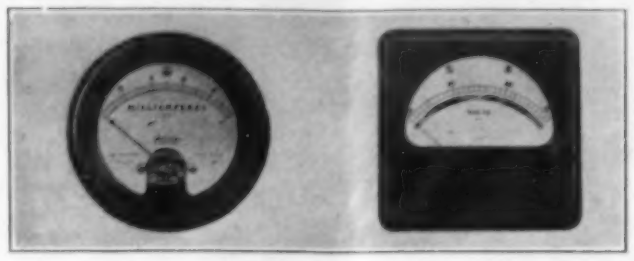
If you write maker identify as IEN - 5281



If you write maker identify as IEN - 5283

METER . . Panel instruments, interchangeable round and square bezel

Source: PHAOSTRON COMPANY
151 Pasadena Ave., Dept. IEN, South Pasadena, Calif.



Optional mirror scales

The company announces a new line of Custom panel instruments for applications that are not subject to extreme shock. The new units employ the same basic movement as the company's previously developed ruggedized design, with exception of the shock mount. The metal housing meets JAN-I-6 and MIL-M-6A specifications. Sizes are 1½, 2½, 3½ and 4½ in. in both ac. and dc. ranges with interchangeable round or square bezels and front or rear zero adjustments.

If you write maker identify as IEN - 5284

PRESS . . Open back inclinable, rates 9 ton, 150 strokes per minute

Source: DIAMOND MACHINE TOOL CO.
5111 Coffman-Pico Road, Dept. IEN, Pico, Calif.

Catalog on request

Meehanite castings and a new toggle design non-repeat trip mechanism characterize construction of this new 9-ton bench mounting inclinable press. Stroke is standard in a range from ½ to 3 inches. Shut die height is 7 inches. Ram area is 4½ by 5 in. and bed area is 6½ by 12 inches.

The press is available in plain design for operation at 150 strokes per minute. It is back geared for operation at 100 strokes per minute. The company recommends and can supply, as extra equipment, a ¾-hp. motor. The press weighs 520 lb. and measures 34 in. in height.

If you write maker identify as IEN - 5285

The name plate, Eureka, that shows on the housing of this new vacuum cleaner is actually an inexpensive decalcomania designed and produced by Meyercord Co., 5323 W. Lake St., Dept. IEN, Chicago 44, Ill. It appears on the cleaner housing as six separate letters underlined by an elongated triangle. Application is a single fast operation.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5286

Photos: Courtesy Spanich Bonding & Welding Co., Livonia, Michigan

The "Hot Shot" Bonding machine shown above was specially designed for the production department of one of the largest manufacturers of electrical appliances when previous methods of processing their parts proved unsuccessful. The positive clamping action of eight Model 340 De-Sta-Co Heavy Duty Toggle Clamps now enables one operator to produce 3840 completed brake-shoes per 8-hour work day. Fast acting De-Sta-Co clamps hold parts firmly together during the 550° F. bonding operation.

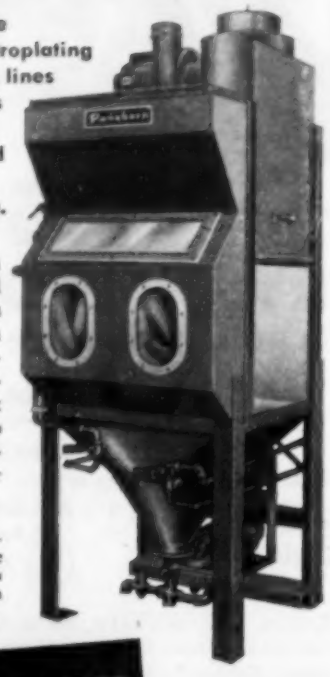
There's a De-Sta-Co Toggle Clamp engineered for any of your work-holding problems in assembly, bonding, welding, machining or inspection. Select from over 40 fixture and portable models. Positive holding pressures up to 4,000 pounds. Write today for a copy of the De-Sta-Co catalog describing available stationary and portable toggle clamps.

DE-STA-CO **DETROIT STAMPING CO.**
342 MIDLAND AVE. • DETROIT 3, MICH.

If you write maker identify as IEN - 5287

Pangborn HYDRO-FINISH

- deburrs • removes scale
- prepares surfaces for electroplating
- removes, blends grinding lines
- finishes threaded sections for fit
- improves die making and maintenance
- improves cutting tool life.



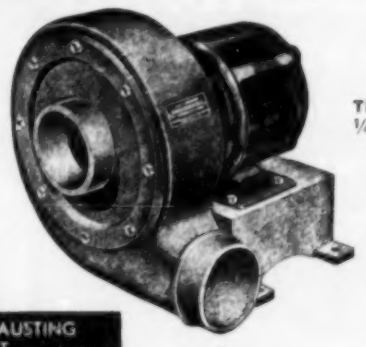
PANGBORN Hydro-Finish does all these jobs and more! Fine mesh abrasives suspended in water give you a precision finish . . . hold tolerances to .0001". Vary abrasives, air pressures, work distances, ratio of liquid to abrasive and you can do almost any finishing job faster and better!

GET THE FACTS on how Hydro-Finish can save *you* money! Write for Bulletin 1400A to: PANGBORN CORPORATION, 2300 Pangborn Blvd., Hagerstown, Md.

Pangborn BLAST CLEANS CHEAPER
with the right equipment for every job

If you write maker identify as IEN - 5288

THE Sutton MOTOR DRIVEN PRESSURE BLOWER



THREE SIZES ¼, ½, 1 H.P.

USE FOR
- EXHAUSTING DUST SMOKE FUMES VAPOR
- FORGE BLASTING

CONVEYING COTTON, WOOL, SHAVINGS
COOLING AND DRYING

MADE OF LIGHTWEIGHT CAST ALUMINUM ALLOY, CENTRIFUGAL TYPE. Direction of discharge may be changed to any of eight 4 degree positions. Straight wall construction reduces windage and increases efficiency. Standard 3450 r.p.m. direct-connected 60-cycle ball bearing motor, open or totally enclosed types. Capacities, 100 to 800 cu. ft. per min. at static pressures from ½" to 6".

WRITE FOR LITERATURE AND PRICES

Sutton *Manufacturing Corp.*
126 W. WILSON AVENUE NORFOLK, VIRGINIA

If you write maker identify as IEN - 5289

PITTSBURGH a air p pressure t tested COILS

Pipe Coils — Bends — Boiler Tubes

Built for your particular needs. Send blue print or rough sketch for Pittsburgh quotation. Also air-pressure tested Welded Headers, Welded Ammonia Receivers, Accumulators, Pipe Coils, Boiler Tubes. "Let us quote!"

Ask for Pipe Coil Data Book

Pittsburgh Pipe Coil & Bending Company
51 BRIDGE STREET ETNA, PITTSBURGH 22, PA.

If you write maker identify as IEN - 5290

play it SAFE

with ALBION'S new 'Safety Series'

Albion's new "Safety Series" Casters are the ultimate in safety, convenience and economy. Two completely new caster safety devices ... the fool-proof Swivel-Lock and the toe-operated Wheel-Brake can be furnished on practically all Albion light, medium and heavy-duty casters. Simple, dependable and easy-to-use, loads can now be more safely and easily secured without effort or wheel-blocking.

Investigate the new Albion "Safety Series" as an added plant and personnel safety feature in your plant.

Represented in Canada by
C. J. McDONALD, Rear 1564 Queen St. W., Toronto

ALBION INDUSTRIES, Inc.
ALBION, MICHIGAN

If you write maker identify as IEN - 5291

Fast Movers or Shelf Warmers?

Count BOTH

(and 1,001 Other Items)

with this

VARY-TALLY

Multiple-Unit Reset Counter

Vary-Tallies help you separate the sheep from the goats, the big ones from the little ones, the red ones from the green ones — in manufacturing, sales, accounting, researching and what not!

Vary-Tallies will do *any* counting job you want in any combination up to 6 banks high, 12 units wide (with a minimum of 2 units wide). Yes, you can count on 'em or with 'em *to your profit* — note these features of construction:

- Easily Readable from Any Angle . . . Bold figures Always Centered in Window . . . No Glare . . . Figures not Covered by Fingers in Operation
- Easily Portable, yet Ruggedly Built for Long Wear
- All Parts Corrosion-Resistant; Working parts of Hardened Steel
- Separate Counting Units Can be Rotated like Tires on a Car, to Distribute Wear Evenly
- Not Affected by Extreme Heat or Cold
- Individual Tag Above Each Counter-Window — Not Strip Tabs
- Veeder-Root Quality in Every Part

VEEDER-ROOT INCORPORATED
HARTFORD 2, CONNECTICUT

Chicago 6, Ill. • New York 19, N. Y. • Greenville, S. C.
Montreal 2, Canada • Dundee, Scotland
Offices and Agents in Principal Cities

"The Name that Counts"

If you write maker identify as IEN - 5293

FLOORS . . Made of concrete with surface containing iron chips

Source: FLASH-STONE COMPANY
3723 Pulaski Ave., Dept. IEN, Philadelphia 40, Pa.

Bulletin, "Metal Seeded"

Special heavy duty power equipment is employed by the company in constructing a new concrete floor known as Metal-Seeded Dynapakt. Detail information is available including a free survey of particular flooring needs and a cost estimate for a specified installation. The base slab is laid and the Dynapakt topping is finished with a veneer, ⅛ in. in thickness, containing iron chips to provide a non-spalling, non-crumbling, non-slip armor over the fresh topping. The construction is particularly suited for warehouses, machine shops, shipping floors carrying rolling and skidded loads.

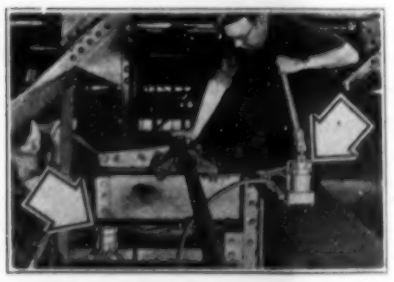
If you write maker identify as IEN - 5294

Burn-Spra is a new tannic acid solution to provide pain relief and protect against infection from burns of second and third degree. The liquid is packaged in a low pressure spray container to issue in a fine concentrated mist that gently contacts the skin without causing shock to nerve ends. It dries quickly leaving a non-oily protective film with instant cooling and soothing action. The liquid is manufactured by Spray Pack Products, 393 E. 131st St., Dept. IEN, Cleveland 8, Ohio.

If you write maker identify as IEN - 5295

JACK . . Hand hydraulic design weighs 38 pounds and rates 30 ton

Source: DUFF-NORTON MFG. CO.
2709 Preble Ave., Dept. IEN, Pittsburgh 30, Pa.



At work on a crane

Lo-Hite is a new assembly of hydraulic ram, 8-ft. connecting hose and a hand operated hydraulic pump. Overall height of the ram in lowered position is 6½ inches. The ram combines with the jack, in folded arrangement, to carry from one job to another. In this position the assembly measures 4½ in. in height. The hydraulic oil is sealed in so application can be made in any position.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5296

A PAID NEWS ADVERTISEMENT BY SOLA ELECTRIC CO.

BUILT-IN CONSTANT VOLTAGE POWER SUPPLY for Plate and Filaments at Moderate Cost . . .

The Sola Type "CVE" Constant Voltage Transformer delivers filament and plate voltages regulated within ±3% or less, with line voltage variations of 100-130 volts. All windings are on the same core, providing a compact moderately priced unit.

They are available from electronic distributors in three capacities: 42 V.A., 75 V.A., and 210 V.A.

Like all Sola Constant Voltage Transformers, they are completely automatic, instantaneous, and continuous in regulation . . . have no moving parts or tubes and are self-protecting against short circuit. These Sola Constant Voltage Power Supply Transformers are made for chassis mounting.

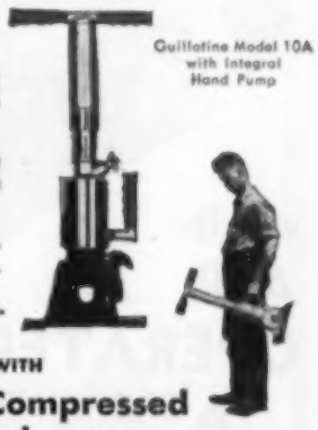
For further information on this and other Sola CV Transformers write for bulletin 13E-CV-170.

SOLA ELECTRIC COMPANY
4633 West 16th Street, Chicago 50, Illinois

If you write maker identify as IEN - 5297

NEW Portable, Hydraulic "GUILLOTINE"

CUTS 1¼" WIRE ROPE!



Guillotine Model 10A with Integral Hand Pump

Tremendous cutting power . . . 22½ tons thrust!

Light weight . . . only 45 lbs. net. Take the tool to the job.

Positive blade retraction . . . will not jam.

Easy hand pump action.

ALSO AVAILABLE WITH

Electric or Compressed Air operated pump

Automatic, power-operated pump assemblies available that are also portable or may be permanently mounted for production application. Special high-power pump available for production cutting over 200 cuts per hour.

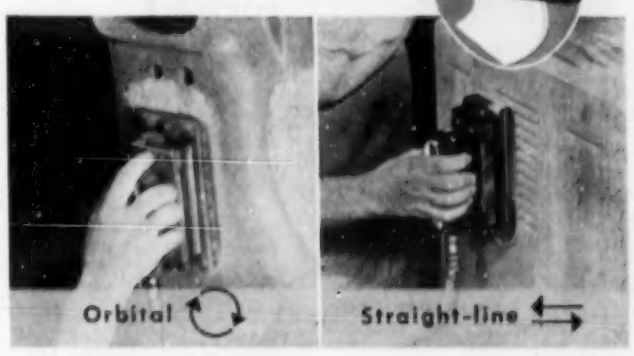
Write For Catalog. Dept. N-5

MANCO MFG. CO.
BRADLEY, ILLINOIS

If you write maker identify as IEN - 5298

NOW! Air Sanders for every sanding need

SUNDSTRAND



Yes! Now you can have Sundstrand Air Sanders for every type of sanding operation . . . orbital for *fast material removal*, straight-line for *finer finishes*. New orbital model is compact, single-pad machine which operates at speeds up to 6000 cycles per minute. Unique pad control permits sanding up to moldings and edges . . . won't bounce off. Convenient palm lever controls air . . . sander will operate on only 50 pounds. Straight-line machines range from a compact single-pad model to a heavy-duty, two-pad machine for large area sanding and production line techniques. All have built-in water attachments for wet sanding operations. See your supplier for a demonstration.

SUNDSTRAND MACHINE TOOL CO., Pneumatic Division, Rockford, Illinois

SUNDSTRAND

A name to remember in **AIR SANDERS**

If you write maker identify as IEN - 5299

Now you can have as many as 9 unit weights—each equivalent to the dial—in the new Toledo cabinet heads! This means a dial as low as one-tenth total capacity of scale can provide wide indicator travel on small loads, without sacrificing high total capacity for the scale. A convenient rotary control operates the unit weights—no lever to lift. Available in heavy-duty floor, built-in, hopper, monorail, motor truck and other types.

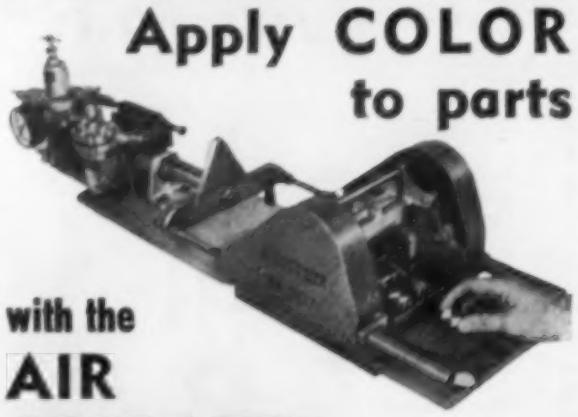
Many more new features in great new line of Industrial Toledos . . . 44 ways better! Send for new catalog. Toledo Scale Co., Toledo 1, Ohio.

TOLEDO®

HEADQUARTERS FOR SCALES

If you write maker identify as IEN - 5300

Apply COLOR to parts



with the AIR OPERATED ACROPRINTER

REG. U.S. PAT. OFF.

The ACROPRINTER comes in various sizes and in hand, air and motor driven models. FOR FILLING LETTERING and DESIGN also FOR APPLYING COLOR TO PARTS, it makes hand jobs mechanical. Paints, enamels, inks, and chemicals may be applied to metals, to plastics and other materials. One of hundreds of marking machines built by "The Original Marking Specialists."

Write for details — now

ACROMARK

THE ACROMARK COMPANY

7 MORRELL ST., ELIZABETH, NEW JERSEY

If you write maker identify as IEN - 5301

JUST PLUG IN TO 115V FOR TEMPERATURE RANGE OF +250° TO —100°

Standard Interior Dimensions. 16 x 16 x 16; 20 x 20 x 18 in.

CONRAD

PORTABLE TEMPERATURE TEST CHAMBERS

Here is low cost answer to the need for precision controlled temperature test chambers in laboratory or plant. New Conrad test chamber is caster mounted for full portability. Dimensions permit passage through 30" door. Air cooled, no plumbing attachments. Just plug into 115V circuit (220V 3 phase model also available.) Temperature range +250° to —100° F.

PROVEN DESIGN — FULLY INSTRUMENTED

The new Conrad portable chamber is based on years of experience in producing environmental chambers of all types. Interior stainless steel. Insulation is rigid permanent type. Coolant is safe Freon so chamber can be used anywhere with no hazard.

Forced air circulation. Adjustable Indicating Thermostat Controller. Differential + or —2°F. Control Switches grouped on engraved indicator plate. Proportional capacity for heating, cooling rate available.

Conrad also produces a full range of temperature, humidity, altitude environmental chambers; dry or liquid. Write for data sheets and prices.

CONRAD, INC. 141 Jefferson St. Holland, Michigan

If you write maker identify as IEN - 5302

SPEED OHIO REDUCERS for every industrial purpose

Years of engineering experience, combined with the most modern equipment and quality materials go into the manufacture of Ohio Gear speed reducers. Every detail of production and workmanship is designed to insure accuracy, durability and years of trouble-free operation.

Illustrated above are a few applications by large manufacturers who depend on Ohio Gear.

1. Ohio Gear DPL Speed Reducer operating a paint booth turn-table in a large metal working plant.
2. Ohio DS Speed Reducer, 300 to 1 ratio, used in the drive of a machine which automatically welds both heads into the shell of a 55 gallon barrel.
3. A PL2 Reducer, 40 to 1 ratio, operating the turn-table of a machine automatically welding automobile crankshaft vibration dampers.
4. Ohio Gear DHU Speed Reducer operating an overhead scrap conveyor belt in a large die casting plant.
5. Series of Ohio Gear HS Speed Reducers operating conveyors in a California fruit packing plant.

Consult your nearest distributor or write us for complete information.

ESTABLISHED 1919

THE OHIO GEAR COMPANY

2345 EAST 179th STREET • CLEVELAND 10, OHIO

OHIO GEARS

If you write maker identify as IEN - 5303

CLEANING . . Portable vacuum machine, engine drive for self-contained action

Source: SPENCER TURBINE CO.
485 New Park Ave., Dept. IEN, Hartford 6, Conn.

Details on request

A gasoline engine, rated at 4.7 hp., replaces the motor normally used on the company's 1½-hp. portable vacuum cleaning machine in this new Type P-136-GBD assembly. The engine drives a multi-stage blower, that develops vacuum to about 64 in. of water, to draw in dirt-laden air through a 25-ft. length of 1½-in. hose.

Dirt is separated from the air at an assembly of tubular bags inside the housing. These bags are attached to a hand shaker. It is operated from time to time to keep them clean and to drop the accumulated dirt into a removable container located between the main wheels. No dirt passes through the blower itself.

The machine is intended for use in locations where electric current is not available or where it is not advisable to have an extension cord from a power source to the unit. Overall size is 37½ by 22½ by 46½ inches. Weight is 350 pounds.

If you write maker identify as IEN - 5304

TESTING . . Specimen grips to apply tension in fine filaments

Source: W. C. DILLON & COMPANY
14620 Keswick St., Dept. IEN, Van Nuys, Calif.

Small handful

Thread or wire in fine gages is passed twice or more around self-aligning drums mounted on free swinging pivots in these new hardened aluminum grips. Then the test specimen is passed between the gripping points. The drums assist in holding the specimen so a test load can be applied. Each grip measures about 1½ in. in length by ⅝ in. in width. Drum diameter is ½ inch. The grips can be employed in the company's tester capable of applying loads to 300 pounds.

If you write maker identify as IEN - 5305

New packaging for the material Plastic Lead Seal is now available in a 1-lb. can with a brush top from Crane Packing Co., 1800 Cuyler Ave., Dept. IEN, Chicago 13, Ill. The sealing material is for use on threaded connections, pipe joints, plugs, screwed fittings and also on flanges and gaskets. It protects against rust and corrosion, prevents seizing and galling, permits disassembly and gasket removal after long periods of service. It will not harden or crack due to temperature change. It will not wash out and is insoluble in chemicals, gas, oil, steam, water. It withstands pressure to 6,000 lb. and temperature to 550 deg. F. It carries the Underwriters' Seal of Approval.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5306

A PAID NEWS ADVERTISEMENT BY PREMIER CO.

NEW ALL-PURPOSE FLOOR MACHINE FOR HEAVY-DUTY INDUSTRIAL USE

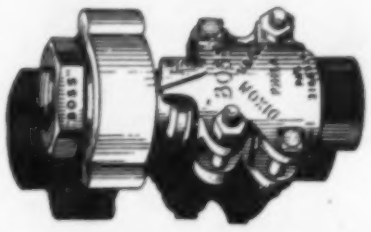
Premier Company, a famous name in industrial vacuum cleaners, introduces a new line of floor machines with the Premier All-Purpose Floor Machine designed for heavy-duty industrial use. Premier All-Purpose units thoroughly scrub, wax, polish, shampoo, buff, dry clean, grind and sand all types of floors.

Featuring built-in balance, the new Premier units are easy to operate, will not skip or jump. Low in cost, Premier Machines feature the newest improvements in the market to save money on the first day of use. Are designed to clean floors thoroughly and quickly to give custodians more time for other important duties.

Low unit height of 12" and adjustable handle permit cleaning of hard-to-reach areas. G-E heavy-duty motor and newest ball-bearing silent gear train practically eliminate maintenance. Available in three sizes: 13", 15", 18". Necessary attachments included. Complete information given on request without obligation. Write to Premier Company, Dept. 404, 755 Woodlawn Avenue, St. Paul 1, Minn.

If you write maker identify as IEN - 5307

"BOSS"



WASHER TYPE FEMALE COUPLING STYLE W-16

For leakproof, durable connections on hose for every service—steam, air, gas, water, oil, butane, hydraulics—high or low pressure. Furnished with super - strong "Boss" Offset and Interlocking Clamps. All parts (except washers) steel or malleable iron rustproofed. Deep corrugations on stem smoothly rounded to prevent damage to hose tube. Sizes ¼" to 6", inclusive.

From Your Hose Supplier or Industrial Distributor

DIXON VALVE & COUPLING CO.

PRODUCERS OF *The Quality Line* COUPLINGS • NIPPLES • MENDERS • CLAMPS

"BOSS" "G.J.-BOSS" "DIXON" "KING" "AIR KING" "DIX-LOCK"

PHILADELPHIA, PA. BRANCHES: CHICAGO • BIRMINGHAM • LOS ANGELES • HOUSTON

If you write maker identify as IEN - 5308

don't discard dirty, worn-out work gloves . . .

Before

After

LET **ARBILL** MAKE THEM LIKE NEW!

We clean, sterilize, repair and reform your used gloves—return them in good condition, ready for safe performance in toughest duty. And it costs you only a fraction of what you'd pay for new gloves.

Cleaning is done by our exclusive "AR-KLEEN" process. There's absolutely no shrinking. No skin-irritants or fabric-weakening agents are used. Every glove is Sanitized. Repairs made with top quality materials give gloves long life, make them easy to manipulate. Special ARBILL reforming methods assure perfect glove shape. All gloves are pressed, paired and bundled.

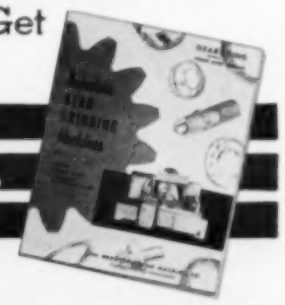
Try Arbill . . . then watch your glove costs drop! We can process all types of gloves. Write for costs.

ARBILL GLOVE COMPANY

4719-21 N. BROAD STREET • PHILADELPHIA 41, PA.

If you write maker identify as IEN - 5309

New Formgrinding Catalog Shows How To Get Unequalled SPEED, VERSATILITY, ECONOMY With GEARGRIND AUTOMATICS



YOUR PARTS—for aircraft, automotive, and many machinery applications, will be ground faster, more accurately on Geargrind Automatics. See how and why in this comprehensive catalog—just off the press. It tells how and why Geargrind Automatics give you

- greater variety of work
- operations never before possible
- an unmatched combination of features
- engineering service that's *really* helpful.

GEARGRIND *Detroit* **SEND TODAY**

3923 Christopher, Detroit 11, Michigan

If you write maker identify as IEN - 5310

BE READY FOR WARM WEATHER

IMPROVE WORKING CONDITIONS

with a

ROBINSON "SULKEY" TYPE COOLING FAN

Put a Robinson "sulkey" type cooling fan right on the job. Roll it into position on its truck type wheels, tilt it to direct the air right where you want it.

Ask for Bulletin No. 8001. It contains capacity tables for man cooling fans in a wide range of sizes and illustrations of other popular mountings.

Place your cooling problems in our hands.

ROBINSON VENTILATING COMPANY

Manufacturers of Fans and Ventilating Machinery for over fifty years.

1948 Railroad Street

ZELIENOPLE PENNSYLVANIA

If you write maker identify as IEN - 5311

Now Available

STOCK SPROCKETS AND STANDARD DIAMOND ROLLER CHAINS

from Diamond Distributors Everywhere

Diamond Taper Lock Sprockets and Bushings are available in all popular shaft diameters. Your Diamond Distributor gives you "off-the-shelf, over-the-counter" service from his stock of Taper Lock Bushing sizes.

In the smaller sizes, solid Diamond Sprockets with fixed stock bores for all popular shaft sizes are available complete with Keyways and Setscrews.

- A complete, balanced, attractively priced stock of Sprockets and standard Diamond Roller Chain is now available for fast "off-the-shelf, over-the-counter" service.
- Taper Lock Sprockets and Bushings in the larger sizes are available with a full assortment of finished bores for all popular shaft sizes.

Now the correct Sprockets and high quality Diamond Roller Chains for new applications and replacements are as near as your telephone.

Your Diamond Distributor can furnish you Diamond Sprockets, Roller Chain and complete drives to meet emergency and normal service demands for all standard drive ratios and popular horsepowers—*from stock!*

See the classified section of your local telephone directory for the number and address of your nearest Diamond distributor.

DIAMOND CHAIN COMPANY, Inc.

Where High Quality is Traditional

Dept. 465, 402 Kentucky Avenue, Indianapolis 7, Ind.

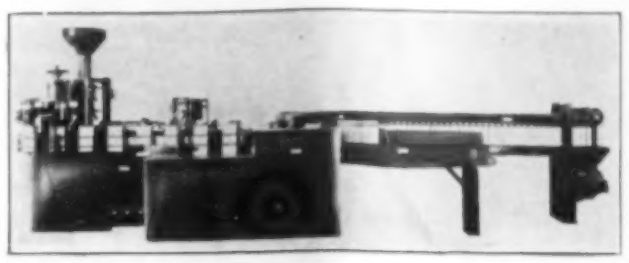
Offices and Distributors in All Principal Cities

DIAMOND ROLLER CHAINS

If you write maker identify as IEN - 5313

PACKAGING . . Carton filler opens, fills, closes automatically

Source: A-B-C PACKAGING MACHINE CORP. 102 S. Frost St., Dept. IEN, Quincy, Ill.



Handles one specified carton size

The operator of this new automatic machine places knock-down cartons in a magazine at about the front center. The machine takes them one at a time from the magazine by means of vacuum cups on a revolving turret. It opens them, places them in flight pockets moving toward the left. It tucks the flaps, applies glue and closes the bottom as the cartons approach the six-head filling turret at the left hand end.

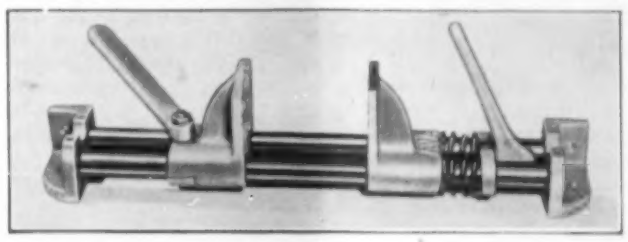
Volume to be filled is adjustable by turning a hand wheel to set a telescoping tube for each head. The product feeds into a hopper and from there flows through the tubes into the cartons. Movement from this point is toward the right to tuck, apply glue and close the upper flaps. The carton is then ejected into a compression belt section from where it is delivered at the right hand end.

The machine occupies a floor space measuring about 4 by 23 feet. Its rotating shafts are mounted in ball bearings. Production is about 200 cartons, 6 by 2 by 8 in. per minute.

If you write maker identify as IEN - 5314

VISE . . Portable assembly, standard openings to 6, 12, 30 inches

Source: EVANSON EQUIPMENT CO. 33 Warren St., Dept. IEN, Newark 2, N. J.



Quick-Action

Parallel tubes, made of blued seamless steel, are anchored in aluminum end castings to make up the body of this new vise. Two aluminum jaws are assembled to slide on the tubes. One is equipped with a clamp to position it and secure it against movement. The other is backed by a pair of springs, a pressure plate and a cam that pivots between the tubes. The complete assembly can be clamped on a bench or at a machine in any desired position or it can be bolted in place permanently.

Three sizes provide openings to 6, 12 and 30 in. between the jaw faces. Larger sizes can be specified, in multiples of 6 in., to a maximum of 60 inches. The springs exert pressure to 300 lb. on the work when the cam lever is in tightened position. List price is about $9 to $12 for the standard sizes. Additional lengths add $1 for each 6 in. to the maximum.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5315

A PAID NEWS ADVERTISEMENT BY BURNDY

Clamp and Compression Terminals . . . for Industrial Wiring

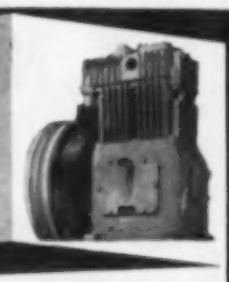
To provide continuous, trouble-free electrical service for industrial and commercial buildings, Burndy offers a comprehensive line of connectors and convenient installation tooling. Burndy clamp-type QIKLUGS and SCRULUGS and compression-installed HYLUGS guarantee compactness, ease of installation, economy and ability to take a wide range of cable sizes. QIKLUGS provide quick, secure connections with maximum efficient current transfer, and connect cable to flat surface. SCRULUGS . . . compact, economical, corrosion-resistant lugs . . . are suitable for installation in switchboxes, controls, relays and related industrial enclosures. Short barrel HYLUGS, electro-tinned to minimize corrosion, are especially suited for applications where a minimum of space is available. HYTOOLS and HYPRESSES, a diversified selection of installation tools for Burndy compression-type connectors, afford simple, rapid and positive installation of HYLUGS. The Burndy combination of **flexible, precision-designed connectors** and **economical, easy-to-operate tools** provides electrical contractors and maintenance men with easy-to-install, dependable, efficient, industrial connections.

For detailed information, write 54-6

DEPARTMENT IEN, BURNDY • NORWALK, CONNECT.

If you write maker identify as IEN - 5316

NEW QUINCY COMPRESSORS WITH safe-Q-lube



For Greater Dependability . . . Lower Maintenance, Quincy Compressors are now equipped with *New* safe-Q-lube to automatically open the intake valve—unload the compressor—whenever the lubricating oil is low. When the compressor is unloaded, lack of air signals operator.

Safe-Q-lube also operates Quincy's Loadless Starting which protects motor and drive from starting overloads. And safe-Q-lube does it with 62% fewer parts for lower maintenance and replacement.

There's a Quincy Compressor for your job. Two new models—Model 255 air-cooled single-stage duplex cylinder 55 CFM piston displacement and Model 350 air-cooled two-stage 50 CFM piston displacement. Quincy has an even more complete line of 21 models in sizes from 1 to 90 CFM.

Write for new Quincy slide card illustrating safe-Q-lube. Write Quincy Compressor Co., Dept H-36, Quincy, Illinois

Quincy COMPRESSOR

Makers of the World's Finest Air Compressors

QUINCY COMPRESSOR CO.
QUINCY, ILLINOIS
Branch Offices: New York • Philadelphia • Atlanta • Detroit • Chicago • St. Louis • Dallas • San Francisco

If you write maker identify as IEN - 5317

NEW . . . PORTABLE INDICATING PYROMETER and MILLIVOLTMETER

. . . handy, highly accurate for laboratory and industrial use

CHOICE OF THREE SCALE RANGES:
800° F.— 430° C.—17 MV
1600° F.— 865° C.—36 MV
2250° F.—1225° C.—50 MV

8 FEET OF THERMOCOUPLE AND LEAD WIRE

FAHRENHEIT THERMOMETER FOR COLD JUNCTION SETTING

STURDY CARRYING CASE . . . 7"x9"x4-1/2" . . . DETACHABLE COVER

With the new TEMCO general purpose pyrometer you can make *accurate* temperature checkings in places not readily accessible and up to *eight feet* away from the instrument. Easily carried from room to room, plant to plant. Accuracy is well within 1% of full-scale deflection . . . automatic compensation provided for internal resistance changes due to ambient temperature variation. Three scale ranges as shown above . . . calibrated in Fahrenheit, Centigrade and Millivolts . . . 3¾" mirrored scale . . . housed in attractive, rugged carrying case. A compact, easily operated unit that quickly gives you readings *exactly where and when needed!* Price: $46.50. Write for illustrated bulletin and name of nearest dealer.

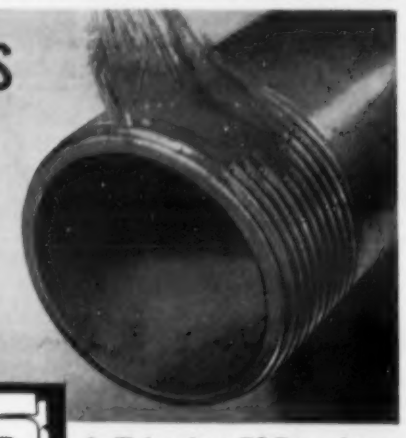
TEMCO

PYROMETERS
TEMPERATURE CONTROLLERS
ELECTRIC FURNACES
HOT PLATES

THERMO ELECTRIC MFG. CO., 482 HUFF ST., DUBUQUE, IA.

If you write maker identify as IEN - 5318

IT COSTS LESS TO USE THE BEST!



PLS

For your convenience: available in handy 1-lb. brush top cans.

1. Takes less PLS to give a perfect seal.
2. One compound for many services: water . . . oil . . . gas . . . steam . . . chemicals . . . petroleum products—low and high pressures.
3. Never washes out—one application lasts forever.
4. Never hardens: joints may be easily broken after years of service—no damaged connections.

Prove it to yourself. Send for a free sample. Crane Packing Company, 1815 Cuyler Avenue, Chicago 13, Ill.

JOHN CRANE — CRANE PACKING COMPANY

If you write maker identify as IEN - 5319

Feature-packed!

New SQUARE D SIZE 4 STARTER

Write for BULLETIN 8536...

Square D Company, 4041 North Richards Street, Milwaukee 12, Wisconsin

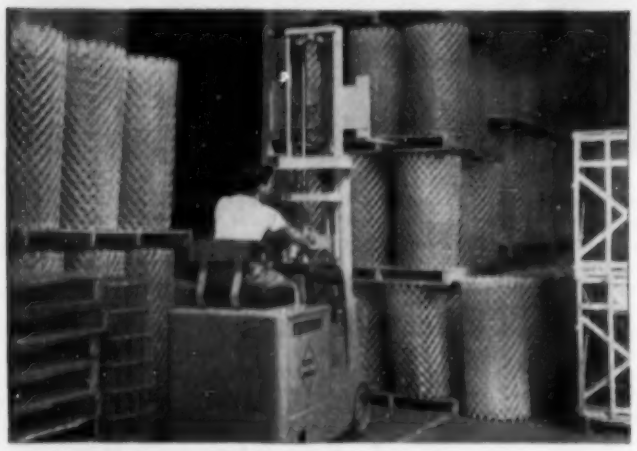
ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

SQUARE D COMPANY

If you write maker identify as IEN - 5320

B.F. Goodrich

FREE TIREWAY TIRE AND WHEEL ANALYSIS can lower over-all tire costs as much as 50%

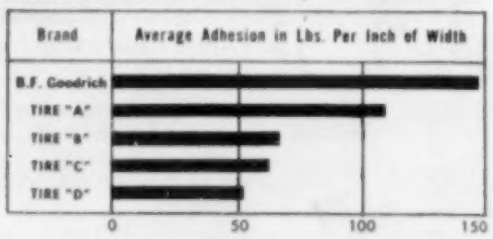


Savings of as much as 50% on industrial tire costs have been reported by users across the country through the use of the B. F. Goodrich Tire and Wheel Analysis Plan! Tire maintenance costs have been reduced 20% and more! This free analysis plan can save *you* money, too. Merely contact your local BFG retailer or mail the coupon below. Without cost or obligation, a trained B. F. Goodrich man will study your materials handling operations. He will tell you what type and size tires, what tread design and compound will serve you best.

The advice and counsel you get will be unbiased, for B. F. Goodrich makes a *complete* line of industrial tires. A special TW Analysis is available for manufacturers of industrial hauling equipment.

AVOID TIRE FAILURES LIKE THIS. Poor adhesion of rubber to steel caused this tire to fail prematurely. The chart below, based on extensive comparison tests of leading makes of tires, proves the superior adhesion qualities built into BFG solid industrial tires.

Tests Prove B. F. Goodrich Adhesion Best



The B. F. Goodrich Company
Tire & Equipment Division
Department TW-360, Akron 18, Ohio

Please send me:
- ☐ Additional information on your Tire and Wheel Analysis Plan
- ☐ Free copy of "Industrial Tire Guidebook"
- ☐ Free copy of "How to Get Extra Service Out of Solid Industrial Tires"

Name_____
Company_____
Street_____
City_____ Zone____ State____

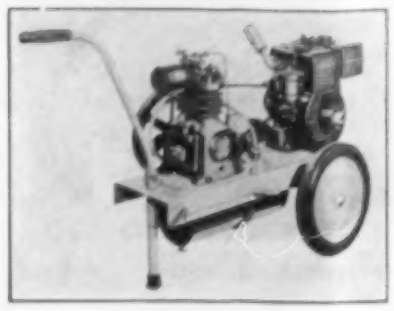
Specify B. F. Goodrich tires when ordering new equipment

RESEARCH KEEPS B.F.Goodrich FIRST IN RUBBER

If you write maker identify as IEN - 5322

COMPRESSOR . . Mobile units for paint spraying and general utility

Source: DE VILBISS COMPANY
300 Phillips Ave., Dept. IEN, Toledo 1, Ohio



Unloader control

Engine or motor drive can be specified for this new single cylinder air cooled compressor. It is available in three assemblies. Two are 1 hp. and are rated respectively at 5.4 cfm. on 60 lb. pressure and 4.2 cfm. on 100 pounds. The third assembly is 1 hp. and delivers a little under 2 cfm. at 100 pounds.

Mounting is on a common inverted channel base for the engine and compressor. A receiver is secured beneath it and the assembly rides on two rubber tired wheels. The compressor is fitted with an intake filter. Its flywheel has fan type spokes to circulate cooling air. Lubrication is by splash and ring oiling.

If you write maker identify as IEN - 5323

TIMING . . Interval unit for variable equipment control delay

Source: BENCHMASTER MFG. CO.
1835 W. Rosecrans Ave., Dept. IEN, Gardena, Calif.

Knob sets interval

Delay interval, to 10 sec. prior to start, or to shut-off of an equipment circuit is provided by this new Tele-Trol electronic timer. The unit is continuously variable from 0 to 10 seconds. It recycles when "triggered." It operates on 110-volt single cycle ac. and rates 30 amperes. It is available for 220 or 440-volt three phase operation. Overall dimensions are about 3 by 4 by 5 inches.

If you write maker identify as IEN - 5324

A small tank, to hold liquid petroleum gas and a vaporizer, were added to a Clark Carloader fork truck to convert the truck to operation on the gas in place of gasoline. The conversion eliminated troublesome fumes issuing from the gasoline engine while the truck was employed indoors in a warehouse. A spare tank is kept on hand to refuel the truck at two or three day intervals. Clark Equipment Co., Dept. IEN, Battle Creek 49, Mich. can supply detailed information.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5325

A PAID NEWS ADVERTISEMENT BY MINNESOTA RUBBER & GASKET CO.

NEW PROCESS GIVES RUBBER PARTS CLOSER TOLERANCES, LONGER LIFE

Cuts cost of special rubber parts

Minnesota Rubber and Gasket Company, Minneapolis, Minnesota, now manufactures special molded rubber parts of higher density and closer tolerances than ever before obtainable. Rubber injection molding processes, developed and exclusively used by Minnesota Rubber, allow mass-production of intricate rubber parts at lower cost.

In contrast to conventional compression methods, the new Minnesota Rubber process leaves no damaging "flash" or weakening blemishes. Tolerances are held to within ±.001 inch. Injection molding permits bonding rubber to brass, steel and other metals. The new process gives greater quality control and a consistently lower rate of rejection than conventional methods.

For complete information, write the Minnesota Rubber and Gasket Co., Dept. 330, 3630 Wooddale Avenue, Minneapolis 16, Minnesota.

If you write maker identify as IEN - 5326

VALVE . . Needle design with clamping nuts for panel mounting

Source: JAS. P. MARSH CORPORATION
3501 Howard St., Dept. IEN, Skokie, Ill.

Threaded ends

Carbon steel bar stock is employed for the body and stem guide in this new Series PM needle valve, the same as in Type 1900 previously described IEN-8120-53. The guide is threaded from the packing nut end to close to the body shoulder. It carries two clamping nuts to mount the valve in a hole through a panel.

The valve stem is made of stainless steel with fine pitch threads for throttling duty. It is sealed with a Marpak molded packing. Application can be made in circuits carrying gas, oil, water to 10,000 pounds. Sizes start at ⅛ inch.

If you write maker identify as IEN - 5327

TUBE . . Seamless steel for high stresses and temperatures

Source: BABCOCK & WILCOX CO.
161 E. 42nd St., Dept. IEN, New York 17, N. Y.

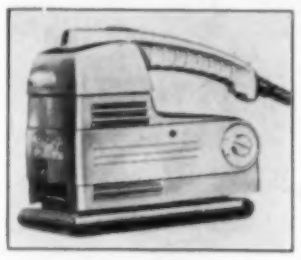
Technical data upon request

Hot extrusion is employed in production, in a limited size range, of a new austenitic seamless stainless steel tube. Material in the tube is Universal Cyclops Uniloy 19-9DL. Applications are being made in jet engines, experimental aircraft, gas turbines. The material shows good strength at temperatures to 1,200 deg. F. The steel is corrosion resistant and has characteristics similar to 18-8 stainless. It is tough at both room and elevated temperatures. The new tube will be known as Croloy 19-9DL.

If you write maker identify as IEN - 5328

SANDING . . Portable electric tool operates at 14,400 strokes per minute

Source: SYNCRO CORPORATION
Dept. IEN, Oxford, Mich.



Straight line action

The electric drive in this new No. 900 portable sander provides direct reciprocating action and contains no rotating parts. The unit employs ¼ of a standard 9 by 11-in. sandpaper sheet and is designed for continuous operation on 110-volt 60-cycle ac. Overall dimensions are about 8¾ by 3½ by 6½ inches.

The rubber mounted handle encloses the control switch and carries a built-in adjustable work light. The mounting isolates the operator's hand from any vibration. Housing and handle are made of aluminum. A three-wire 8½-ft. extension cord and plug are provided. List price is about $40.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5329

Narrow Areas No Barrier for

WACO ROLLING TOWER

with ladder frames

WACO Rolling Tower with Ladder Frames offers complete scaffolding freedom in narrow areas. Only 29½" wide, this Rolling Tower can be rolled down narrow aisles, through any standard doorway, or into crowded corners. Straddle brace allows ladder section to be easily wheeled over desks, chair, filing cabinets and other obstacles. Guard rails afford complete protection. WACO Rolling Towers with Ladder Frames are equipped with all the famous WACO features—heavy-duty rubber tire wheels . . . brake-type casters . . . Built-in, floating coupling pins. WACO "Speedlock Assembly" eliminates bolts, wing nuts, special assembly tools. WACO Rolling Tower with Ladder Frames is designed to give speed, safety, economy in scaffold erection and use. For complete information, see your WACO dealer or write to

WACO *Manufacturing Company*
3567 Wooddale Avenue, Minneapolis, Minnesota

CANADA: Armson Irons Works, Windsor, Ont.
WEST COAST: Waco-May Co., Los Angeles, Cal.

If you write maker identify as **IEN - 5330**

CUTTING . . Air electric torch for use in metal cutting and scarfing

Source: ARCAIR COMPANY
Box 337, Dept. IEN, Lancaster, Ohio

Cuts, gouges any metal

Connections are completed to a source for compressed air and to a standard arc welding machine to operate this new Model J-5 cutting torch. An arc is drawn between the work and a carbon graphite electrode. The compressed air issues through a nozzle with which it is directed at the arc to blow the molten metal away.

The new torch represents further development of the smaller equipment, previously described IEN-6096-53. It mounts the electrode at an angle and employs a spring loaded plunger that holds the electrode in place and acts as an air valve so the air is on as long as the electrode remains in the torch.

Two heads are supplied with each torch, one for a ⅜ and one for a ½-in. electrode. A metal shield protects the handle. A heavy duty concentric cable and length of air hose complete the assembly. The torch removes excess metal from defective castings, gouges out cracks in castings for rewelding, removes defective welds and performs general cutting operations in maintenance work.

If you write maker identify as **IEN - 5331**

JACK . . Hand hydraulic kit with accessories for general utility

Source: BLACKHAWK MFG. CO.
5325 W. Rogers St., Dept. IEN, Milwaukee 46, Wis.

Super FZ-15

A hand pump, equipped with a length of hydraulic hose and a coupler, serves four hydraulic rams, ranging from 4 to 20 ton, in this new assembly of Porto-Power hydraulic equipment. In all, 46 pieces make up the complete utility kit for pushing, pulling, lifting, clamping, spreading, bending, pressing operations. The smallest of the rams measures 1$\frac{11}{16}$ in. in lowered position. The equipment is packed in a wood case.

If you write maker identify as **IEN - 5332**

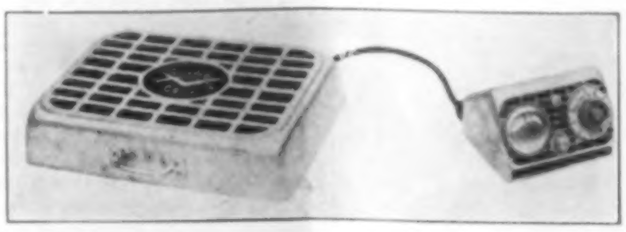
Gould-National Batteries, Inc., 467 Calhoun St., Dept. IEN, Trenton 7, N. J., tells us that it expects soon to have a new type of dry charge electric storage battery in production for automotive starting and lighting duty. The battery requires initial introduction of sulfuric acid for a short "soaking period" prior to application. It can be held indefinitely in dry charge storage without deterioration.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 5334**

WEIGHING . . Electronic scale actuated by sealed strain gage cell

Source: CONTROL CELLS CORP.
511 N. Hillside, Dept. IEN, Wichita 6, Kansas



No links, levers, vacuum tubes

A control housing, to the right in this new assembly, takes power from a 110-volt 60-cycle ac. source or to specification, operates on a battery at 6 volts. It connects electrically to one or more load platforms enclosing hermetically sealed strain gages. Impulses, resulting from a load on the platform, are amplified and combined at the control to read weight when a dial is turned to balance the bridge circuit as indicated on a meter mounted beside the dial.

The control can be specified with connections for 1 to 4 load platforms. Each platform is available with load rating at 5, 10 or 20 ton. The platform assembly weighs 35 lb. and measures 14 by 11 by 3½ inches. The control unit weighs 4½ pounds. The scale is accurate within 0.25 per cent to 1 per cent of full range in an operating range between minus 20 and plus 130 deg. F.

The construction is water proof and weather proof for application indoors or outside. List price, with four platforms and one control, is $970 for the 5 and 10-ton platform units. It is $1,370 for the 20-ton assembly.

If you write maker identify as **IEN - 5335**

SAWING . . Rail type machine for metal, plastic, plywood, to 10 ft.

Source: HENDRICK MFG. CO.
Room 346, Dept. IEN, Marblehead, Mass.

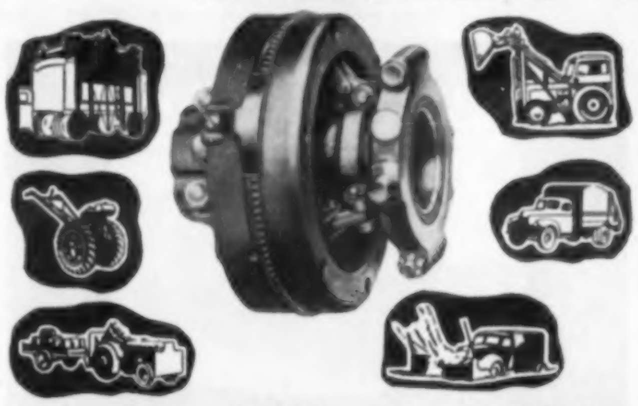
Mounts on a table or stand

Motor driven head, carrying a circular saw blade, rides a pair of rails positioned between end uprights in the company's new Type-MLR panel saw. The rails can be positioned square or at an angle and can be raised and lowered at the end uprights so the saw blade position and movement are in desired relation to the work. The blade is shown at 45 degrees.

A wire rope is wound on a drum equipped with a hand wheel at one end of the machine. It passes around an idler sheave on the other upright. Its two ends terminate in the saw head. Turning the hand wheel feeds the blade or retracts it. The saw motor is available to specification. The machine is particularly suited to cut plastic and plywood panel stock.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 5337**



To Make SURE That YOUR CLUTCH Application Is RIGHT

Before you approve the blueprint for your next model — double check to make sure it includes the latest improvements you can build into your product with the right type and size ROCKFORD CLUTCH. It will pay you to consult our engineers concerning technical clutch advance that will give you and your customers the advantages of better power transmission control.

Send for This Handy Bulletin

Shows typical installations of ROCKFORD CLUTCHES and POWER-TAKE-OFFS. Contains diagrams of unique applications. Furnishes capacity tables, dimensions and complete specifications.

ROCKFORD CLUTCH DIVISION BORG-WARNER
303 Catherine Street, Rockford, Illinois, U.S.A.

ROCKFORD CLUTCHES

If you write maker identify as **IEN - 5338**

REVOLVATOR GO-GETTER Lift Efficiency

Door-To-Door Warehouse Handling Efficiency

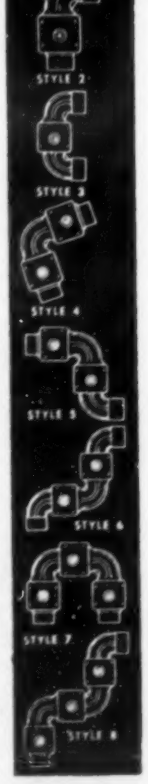
For the efficient flow of goods within and without a plant—from production to storage—to shipping—there is no lift truck on the market today that surpasses the Revolvator Go-Getter line.

Illustrated above is the high lift model Go-Getter—a favorite of the food producers—accepted throughout all industry. In 2000-3000 lb. capacities—remarkably adept in narrow aisle work, the Revolvator Go-Getter high lift truck permits great economies in warehousing.

Write for the full facts today.

REVOLVATOR CO.
8759 Tonnele Ave. North Bergen, N. J.

If you write maker identify as **IEN - 5333**



Really Free Turning
BALL BEARING SWIVEL FITTINGS

EMSCO

FOR LIQUID GASES, STEAM, AND CHEMICALS. HOT OR COLD SERVICE. CONTINUOUS OR OCCASIONAL ROTATION.

360° FREE ROTATION—1, 2 AND 3 PLANES FITTINGS AND PRESSURES TO 15,000 P.S.I. AND TEMPERATURES TO 750° F.

Over 500 sizes, types, styles. Low pressure fittings ⅜" to 14". High pressure and high temperature ⅜" to 6". Universal service (U. S. type) fittings and pressures to 1,000 psi. Temperatures to 750° F. asbestos packed. When packed with teflon ideal for corrosive service. Gear driven types for loading racks also available.

Send for complete catalog and prices. State kind of service, pressure, temperature, pipe size and indicate style at right, threaded, flanged or weld ends.

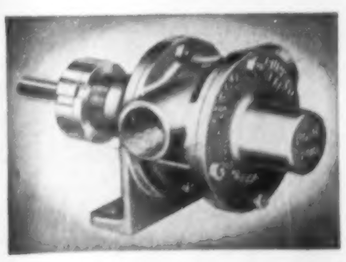
EMSCO EMSCO MANUFACTURING CO.
LOS ANGELES, CALIF.
Houston, Tex. Garland, Tex.

If you write maker identify as **IEN - 5336**

A PAID NEWS ADVERTISEMENT BY JABSCO PUMP COMPANY

JABSCO STAINLESS STEEL PUMPS SOLVE CORROSIVE PUMPING PROBLEMS

Designed and Engineered for Chemical Applications



Jabsco's complete line of self-priming, corrosion-resistant pumps answer a multitude of pumping needs. Models 2810 (1" pipe size), 2870 (½"), and 2690 (⅜") have all metallic parts of Type 316 stainless steel. Shafts are supported by oversize, replaceable carbon bearings, stuffing box type shaft seal with chemical resistant packing. Pumps function perfectly even with dry suction lifts approaching 15', no foot valve is required. When primed, they suck as high as 26'. Jabsco pumps have no metal-to-metal contact, no gears to wear or become noisy. The exclusive "camflexed" Neoprene Impeller is the only moving part. This tough, long-lived, wear resistant impeller is self-lubricated by the liquid pumped. Jabscos are economical, low in first cost, and trouble and maintenance free, even under continuous operation. May be mounted at any angle to pump thin or viscous liquids, and can be operated efficiently at low or high speeds. At 10' head and 1750 RPM, Model 2810 delivers up to 27 GPM, Model 2870 up to 10 GPM, Model 2690 up to 4 GPM. Other stainless steel models also available with ball bearings and mechanical seals. For complete information on how Jabsco can solve your pumping problems, write **Jabsco Pump Company,** 2031 North Lincoln Street, Burbank, California.

If you write maker identify as **IEN - 5339**

with Twin Disc HYDRO-SHEAVE® Drives

In thousands of diversified applications the HYDRO-SHEAVE Drive, slipped on the end of motor shaft, permits *smoother* acceleration —*eliminates* motor stalls and burnouts. Sizes for motors and engines from ¾ to 50 hp.

Only HYDRO-SHEAVE Drives provide exclusive *Double-Circuit* fluid coupling design for full torque output, maximum shock absorption, less overall diameter with greater capacity.

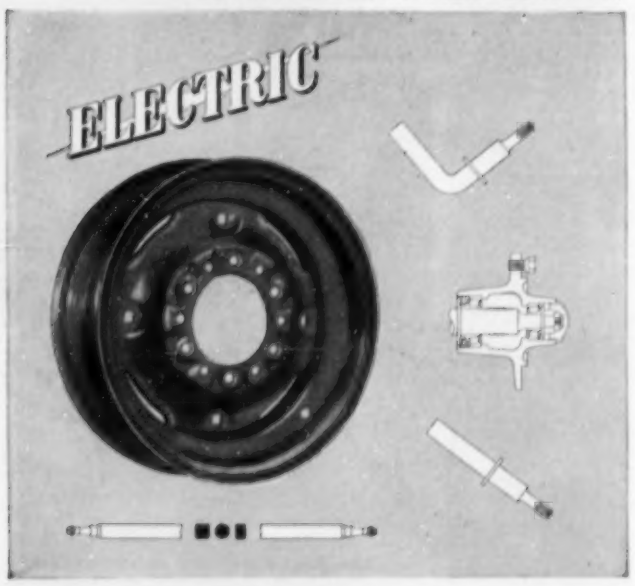
TWIN DISC

TWIN DISC CLUTCH COMPANY, Racine, Wisconsin

If you write maker identify as IEN - 5340

McGILL MANUFACTURING CO., INC. 100 N. Lafayette St. Valparaiso, Indiana

If you write maker identify as IEN - 5341



A Wheel for Every Job!

Our engineers will recommend the most efficient and economical wheel and axle assembly for your unit. We invite your inquiries.

WRITE US FOR CATALOG
ELECTRIC WHEEL CO.
2800 SPRUCE, QUINCY, ILLINOIS

If you write maker identify as IEN - 5342

ULTRA-CHEX GAGE BLOCKS for Every Need!

Supplied in one Superior Accuracy

5 MILLIONTHS ± ACCURACY

9 Block Set $22.50
OPTICAL PARALLEL $5.00

Quick Delivery on Small Standard Sets

34 Block Set $125.00
INCLUDING OPTICAL PARALLEL

82 Block Set $275.00 Complete
This Set will supply the needs of any discriminating shop that must work to gage-block precision.

All Sets at "Money Saving Prices" due to Mass Production Methods.

WRITE FOR FULLY ILLUSTRATED CATALOG

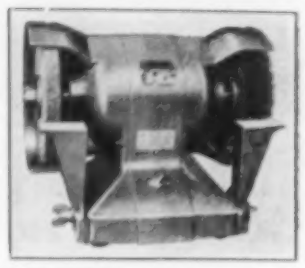
Dealers: Here's a real profitable line!

GEORGE SCHERR CO., INC.
COMPLETE LINE OF PRECISION INSTRUMENTS
200-EN LAFAYETTE ST. • N.Y. 12, N.Y.

If you write maker identify as IEN - 5343

GRINDING . . Bench machine takes 6 in. wheels, buffs, wire brushes

Source: BLACK & DECKER MFG. CO.
715 E. Pennsylvania Ave., Dept. IEN, Towson 4, Md.



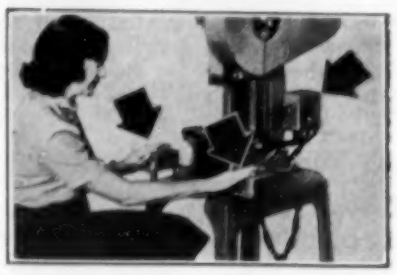
Six inch model

Sealed ball bearings, factory lubricated, support the 12 by ½-in. spindle in this new bench grinder. The motor rates ¼ hp. and can be specified for operation on 25, 50 or 60-cycle ac. at 110 or 220 volts. Speeds, corresponding to the cycle input, are 1,500, 3,000 or 3,600 rpm. The assembly weighs 25 lb. and stands about 9 in. in height. Standard equipment includes a 3-conductor cord, a base mounted toggle switch, rubber feet, wheel guards, adjustable tool rests, a medium grinding wheel and a wire brush wheel.

If you write maker identify as IEN - 5344

PROTECTING . . Clutch operator takes worker's hands from danger zone

Source: BENCHMASTER MFG. CO.
1835 W. Rosecrans Ave., Dept. IEN, Gardena, Calif.



In place on a press

Tele-Trol is a new assembly of two contact buttons and a solenoid to control the action of a single-trip or single-cycle mechanical clutch. A worker is required to use both hands on the buttons in order to close the solenoid circuit so the clutch will engage. This requirement takes the worker's hands from the danger zone prior to starting a cycle.

If you write maker identify as IEN - 5345

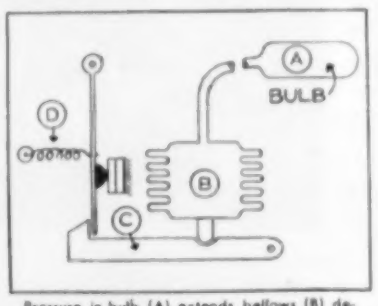
You can put up a small building quickly and with little effort when you use the new steel angle and panel fabricating elements, previously described IEN-12002-53. Flowstrut trade names the components. They are cut and perforated so they require no drilling, riveting or welding. A wrench and cutter are the only tools needed. The parts are bonderized and finished in baked gray enamel. They can be used alone or in connection with plywood, corrugated iron, asbestos and other construction materials. The metal parts can be salvaged when the building is taken down. They are suited also for construction of benches, catwalks, racks, tables, trestles for indoor and outdoor use. Flowstrut Corp., 23 Leonard St., Dept. IEN, New York 13, N. Y., supplies the component parts.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5346

A PAID NEWS ADVERTISEMENT BY CLIFFORD MFG. CO.

VAPOR PRESSURE bellows assembly solves problem of accurate, dependable temperature control



Pressure in bulb (A) extends bellows (B) depressing catch mechanism (C) which releases spring contact (D) that shuts off defroster circuit.

A timing motor manufacturer neatly solved a temperature-control problem by installing a bellows assembly in its defroster unit. The problem was: how to shut off the defroster circuit once defrosting had reached a pre-determined point.

The mechanism had to be precise and reliable, else defrosting might continue over too long a period and food spoilage set in. The positive-acting components of a vapor-pressure bellows system proved the ideal device.

Clifford's vapor-pressure thermostatic bellows systems are simply designed, dependable, economical and easy to install. They are used not only by refrigerator manufacturers but in all types of Diesel engines, stationary and automotive, as well as truck and passenger car gasoline engines. They are also used as temperature regulators for water heating and cooling tanks, steam coolers, acid baths, tempering baths, glue heaters.

For further information, write for bulletin: "What To Consider When Selecting A Metallic Bellows." Clifford Manufacturing Company, 146 Grove St., Waltham 54, Mass. *Division of Standard-Thomson Corporation.* Sales offices in New York; Detroit; Chicago; Los Angeles; Waltham, Mass.

If you write maker identify as IEN - 5347

To control AIR... ANYWHERE use NP Control Valves

INVESTIGATE National Pneumatic Co., Inc.'s wide range of air control valves, from 0 to 125 p.s.i. with ¼" porting, in 3 way and 4 way types. NP valves are modern in design, ruggedly constructed and require minimum maintenance.

PILOT CONTROL VALVE
Offers automatic retraction or continuous cycling when used in a system incorporating remote control valves.

DC-31810 HAND OPERATED CONTROL VALVE
Simple design for long, dependable service. Sturdy construction, easy action.

DC-39970 FOOT OPERATED CONTROL VALVE
Rugged, sure, dependable action. Pedal housing assures *safe* operation.

THERE IS AN NP VALVE for every air-control job. In addition to the valves shown here, NP also makes the following types of valves: Pressure regulating; speed adjusting; quick release; ratchet. Write today for bulletins to Industrial Actuators and Controls Division.

NATIONAL PNEUMATIC CO., INC. AND HOLTZER-CABOT DIVISIONS

125 Amory St., Boston 19, Mass.
Sales Service Representatives in Principal Cities throughout the Free World

If you write maker identify as IEN - 5348

Mix fluids FAST

Cheaper than by hand

Save time, money, on any job where you must:

1. Mix, blend, or stir fluids
2. Wash, suspend, or dissolve solids
3. Disperse gases in liquids

Mix rapidly, thoroughly with a LIGHTNIN Portable Mixer. Just clamp it on open tank or container. No baffles necessary.

Uniformity — in seconds

Costs much less than hand stirring —because it mixes so fast. Turns over tank contents rapidly from top to bottom, while rotating them around and around. Gives you complete uniformity, often in a few seconds.

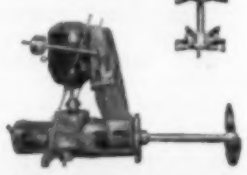
Fully guaranteed to do an efficient mixing job for you, or your money back. Thousands in use everywhere. Many in service over 20 years.

Thirty models to choose from—⅛ to 3 HP. Electric and air motor types. Direct or gear drive.

Send today for illustrated Catalog B-108 and prices.

FOR PERMANENT MOUNTING
Propeller mixers for open tanks, closed pressure vessels. Sizes ¼ to 3 HP. Send for Catalog B-103.

FOR BIG MIXING JOBS
Turbine and paddle mixers for open or closed tanks. Sizes 1 to 500 HP. Send for Catalog B-102.



FOR VERY LARGE TANKS
Side entering propeller mixers. Sizes 1 to 25 HP. Send for Catalog B-103.

Lightnin® Mixers

MIXING EQUIPMENT Co., Inc.
124-e Mt. Read Blvd., Rochester 11, N. Y.
In Canada: William & J. G. Greey, Ltd., 100 Miranda Avenue, Toronto 10, Ont.

If you write maker identify as IEN - 5350

Problem:
How To Seat More People

Answer:
SICO System

Industry's overcrowded cafeterias and working areas cannot seat increasing numbers of people by adding ordinary tables. The best solution to the problem is *more* space—the kind of space possible with portable SICO Tables and Bench Service. SICO units seat more people with more comfortable leg and elbow room than any other practical system—increasing comfortable seating capacity by 33% in some rooms!

Durably constructed of tubular steel, SICO units feature tough, wear-resistant tops. . . complete portability . . . simple folding and unfolding action without pinching fingers, toppling over or marring floors.

There is a SICO System unit to suit almost every industrial seating need.

For further information, call or write today to . . .

Seating inc. 6045 Pillsbury Avenue South, Minneapolis 19, Minnesota

If you write maker identify as IEN - 5351

KOHLER ENGINES

4-CYCLE AIR-COOLED

K90

K160

K90 ..... 3.6 H.P.
K160 .... 6.6 H.P.
K330 .... 12.0 H.P.
K660 .... 26.8 H.P.

Kohler Engines are engineered and manufactured to the high standards which have made the Kohler mark known for quality the world over. Power for garden tractors, pumps, sprayers, snow removal equipment, grain elevators, hoists, portable saws, concrete mixers, compressors, industrial lift trucks.

K330

Write for information

K660

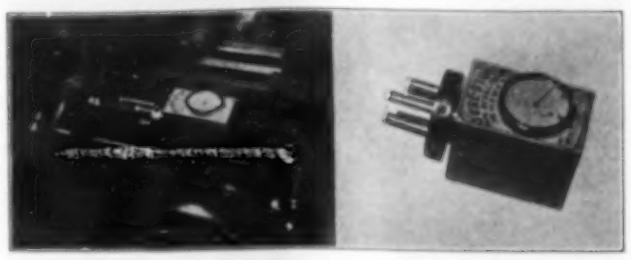
Kohler Co.,
Kohler, Wisconsin
Established 1873

KOHLER OF KOHLER
PLUMBING FIXTURES • HEATING EQUIPMENT
ELECTRIC PLANTS • AIR-COOLED ENGINES
PRECISION CONTROLS

If you write maker identify as IEN - 5353

GAGE . . Turret stop with dial indicator for exact control

Source: D-S-C MACHINE COMPANY
27 Bertel Road, Dept. IEN, Mount Vernon, N. Y.



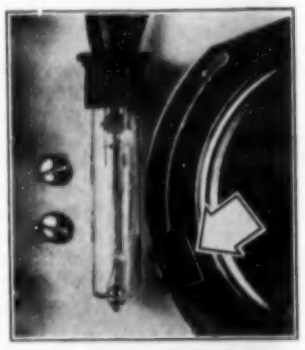
Trade named Sure-Stop

Drill rods, with threaded end adjustments, apply in the five "stop" positions in the rotating plate at one end of this new dial indicator stop. They are set to contact a stationary stop on a machine bed while the unit itself is mounted on the carriage. The operator watches the dial indicator and makes final carriage movement to provide a predetermined indicator reading rather than to judge by "feel". Errors in judgment, due to variations in operator action, are eliminated and the carriage can be moved within a thousandth of an inch to a predetermined point for any of the five stop positions. Overall length of the unit is 2⅝ in. plus the length of the stop rods.

If you write maker identify as IEN - 5354

SWITCH . . Sealed mercury unit is operated by a permanent magnet

Source: HAMLIN INCORPORATED
1316 Sherman Ave., Dept. IEN, Evanston, Ill.



Visible contacts

The contact electrodes, in this new switch, stand immersed in a drop of mercury at the bottom of the glass tube in which the switch is hermetically sealed. The electrodes are guided by a central wire and one of them carries a magnetic armature. This armature is lifted or released by a small magnet passing outside the glass cylinder. A typical installation in which the magnet is wheel mounted is shown in the illustration.

The switch measures ½ in. in diameter by 2½ in. in length. It is fitted with a cap ¾ in. in diameter by ½ in. in length. Rating is 1 amp. on 120 volts. The interior of the switch is filled with inert gas. Typical applications are on automatic scales, revolution counters, coin-operated machines, laboratory equipment.

If you write maker identify as IEN - 5355

Permanent magnets are sealed into tubing made of extruded unplasticized chemically inert Kel-F and are employed as the stirring elements in laboratory equipment. The plastic protects the magnet against attack by acids, alkalis, solvents, peroxides between minus 200 and plus 200 deg. C. M. W. Kellogg Co., Box 469, Dept. IEN, Jersey City 3, N. J., can name the molder.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5356

If you write maker identify as IEN - 5357

BARBER COLMAN Wheelco Capacilog

• measures
• indicates
• controls
• records

temperature, speed, voltage, and other process variables

...low-cost electronic instrument for laboratory or plant use!

Something new in instruments . . . the Capacilog is a simplified, low-cost method of controlling and recording temperatures, speed, static strain loads, a-c/d-c voltage and amperage. Meets finest accuracy requirements for production or laboratory work. Simple design . . . easy to service, adjust or adapt for variety of control systems. Write for details, Bulletin C2-2!

Factory-trained field engineers in all principal cities
WHEELCO INSTRUMENTS DIVISION • BARBER-COLMAN COMPANY
Dept. E, 1516 Rock St., Rockford, Illinois

If you write maker identify as IEN - 5358

PUNCHES 15" HOLES IN 3/16" STEEL

Also Performs Bending and Flanging Operations

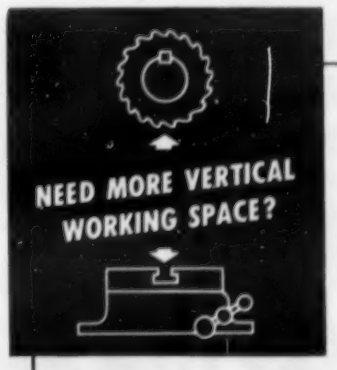
The big holes in Warner & Swasey's Gradall boom plates are punched and flanged on a Steelweld Bending Press. Practically all other steel on the Gradalls is formed and punched on the press. The versatility of Steelweld Presses to handle efficiently many varied operations has proven of great advantage to many users.

Send for free copy of catalog No. 2010.

THE CLEVELAND CRANE & ENGINEERING CO.
4253 East 281st St., Wickliffe, O.

STEELWELD PRESSES

If you write maker identify as IEN - 5359



benchmaster
LO-HEIGHT ROTARY TABLES
supply it!

Table Diameter	6"	8"
Overall Height...	2⅛"	3⅝"
Work Gear Ratio.	60-1	60-1
Dial Graduations.	1/10°	1/10°
Center Hole.....	⅝"	1"
Tee Slots.....	⅜"	⅜"

If a rotary table crowds the vertical capacity of your mill or other machines, here's interesting news! Benchmasters emphasize *LOW table height*, give you use of *extra* vertical clearance for oversize workpieces, bigger cutters or just plain maneuvering! Rugged, smooth turning, accurate.

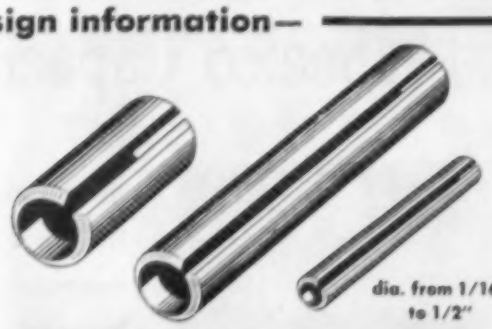
MADE IN TWO TABLE DIAMETERS: 6" and 8". Both sizes have take-up adjustments on worm. 8" table free-turns.

WRITE FOR DETAILS! *Ask also about Benchmaster 12" Rotary Tables! Benchmaster Manufacturing Company, 1835 W. Rosecrans Avenue, Gardena, California.*

benchmaster
World's largest manufacturer of small punch presses and mills.

If you write maker identify as IEN - 5360

Design information—



ROLLPIN

. . . the slotted tubular steel pin with chamfered ends

- Easily driven into holes drilled to normal production tolerances
- Self-locking . . . exerts constant pressure against hole walls
- Easily removed with drift or pin punch
- Fits flush . . . is reusable

Offers assembly-time savings over rivets, set screws, straight, serrated or cotter pins, dowels, hinge pins and many others.

WRITE for detailed catalog—Elastic Stop Nut Corporation of America, 2330 Vauxhall Road, Union, N. J. Address Dept. R-18-553.

If you write maker identify as IEN - 5361

SEND TODAY! FOR THIS HANDY, NEW POCKET-SIZE CATALOG!

It shows you how to select the RIGHT

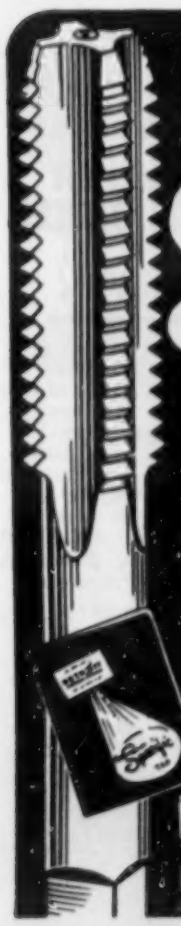
Complete engineering data, drawings, photographs and a complete list of Abart Speed Reducers—all in a 4½" x 6", handy size catalog for easy carrying and reference.

SPEED REDUCER FOR EVERY JOB!

You can meet your exact requirements for each specific application with one of the more than 75 Abart Speed Reducer models in spur, worm and combinations. Single and Double-reduction models are rated from 1/50 to 168 hp. with ratios up to 10,000 to 1. Abart Speed Reducers are oil-tight and sealed against dust.

Abart GEAR & MACHINE CO.
4823 WEST 16th STREET • Bishop 2-2524 • CHICAGO 50, ILLINOIS

If you write maker identify as IEN - 5362



Now you can specify standard

Specific TAPS

specifically engineered *for 6 Specific Materials.* They give you added tap life *at No Increase in Cost* over 'general-purpose' taps.

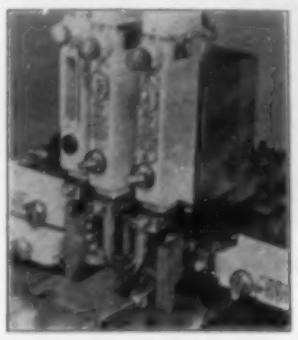
Find out today how SPECIFIC taps can improve your tapping operations and cut your tapping costs. Ask for Bulletin ST 52

DETROIT TAP & TOOL CO.
DETROIT MICHIGAN

If you write maker identify as IEN - 5363

GAGE . . Multi-head equipment for fast production piece inspection

Source: COSA CORPORATION
405 Lexington Ave., Dept. IEN, New York 17, N. Y.



Made in England

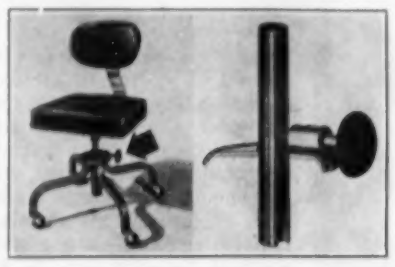
High speed inspection, of one or more critical dimensions on small work pieces passing through production, can be set up for specified operation on the Sigma Multi-Dimension inspection machine which the company is distributing in the United States. Equipment can be supplied for automatic, semi-automatic or hand operation to apply on flat or cylindrical work and to check as many as 28 dimensions simultaneously. Results show on signal lights.

Automatic machines can be arranged to deflect work pieces into separate containers according to their dimensional accuracy and, if desired, to automatically grade these pieces for selective assembly. Each dimension on a component is checked by an electric gage that is accurate within 0.00005 inch. The company is prepared to quote on the required equipment to samples or drawings.

If you write maker identify as IEN - 5364

FURNITURE . . Posture chair with adjustable seat and back rest

Source: ROYAL METAL MFG. CO.
175 N. Michigan Ave., Dept. IEN, Chicago 1, Ill.



Green on gray

Illustrated is new Model 1268 in the company's line of posture chairs employing its new Micro-Hite seat adjustment and a back rest that is adjustable in four directions. The chair legs are made of square steel tube with baked enamel finish. The upholstery is Super-Tuftex. Mounting is on casters.

The cylindrical column, supporting the seat, carries a tapered groove, deep at the bottom, shallow near the top. A hand wheel operated screw bears in the groove. An operator raises the seat to maximum height, then turns the hand wheel until the screw end contacts the deepest part of the groove. Rotating the hand wheel slowly, in reverse direction, then permits the seat to come down to a desired elevation.

If you write maker identify as IEN - 5365

Dimensions are about 2½ by 2½ in. for a new Emtu flash unit to take the new miniature GE M2 photoflash lamp. It is equipped with a reflector and space for two pen type flashlight batteries. A shoe fits the accessory clip of most cameras. Additional clips apply with additional units for more illumination. List price is about $3. Burke & James, 321 S. Wabash, Dept. IEN, Chicago 4, Ill., is the maker.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5366

SAVE 50% on ROOF REPAIR

FREE BOOK SHOWS HOW 90% of Leaky Roofs Can be Saved

Cut Costs in HALF with Unskilled Labor

There are no secrets or special skills to good roof repair! Free step-by-step book shows exactly how to recondition roofs . . . to give 90% of leaky roofs extra years of weather-tight life . . . to do the job right with unskilled labor at HALF the cost. Your business letterhead request brings "Saving Old Roofs" free. Write today!

THE TROPICAL PAINT & OIL COMPANY
1126-1280 W. 70th • Cleveland 2, Ohio
HEAVY-DUTY MAINTENANCE PAINTS SINCE 1883

If you write maker identify as IEN - 5367

DIPPING

STRIPPING

STOP LOSSES due to

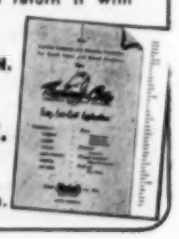
CORROSION, ABRASION, CHIPPING, PITTING of metal parts and products in transit, storage, and manufacture with

Thermo-Cote

THE STRIPPABLE PLASTIC ARMOR FOR METAL PARTS

One quick dip gives you quick, low-cost protection for metal products and parts. Protects against rust, most atmospheric conditions, salt spray, dilute acids, abrasion and moderate impact. Tough, pliable Thermo-cote, the strippable protective coating, clings to metal with an air-tight grip, yet peels off quickly when part is needed for use. Reduces packaging cost because it forms a complete inner wrapping. Eliminates scratching and nicking due to handling in shipping, manufacture or storage. We'll gladly send a sample of Thermo-cote for you to try in your own plant . . . or coat your product sample here and return it with quotations.

FREE! **WRITE TO-DAY FOR ILLUSTRATED BULLETIN.**



ERNST Bischoff CO., INC.
PLASTICS DIVISION
104 Main Street, Ivoryton, Conn.

If you write maker identify as IEN - 5368

DUNBAR QUALITY GLASS TUBING

Designed for the needs of firms who desire close tolerances

We at Dunbar are now drawing quality tubing to very close tolerances by precision control of the variable factors at the source.

Dunbar quality tubing is being drawn to specified diameters with an extremely high percentage of total production falling within a dimensional tolerance range equal to only 25% to 50% of the "commercial range."

The net cost of tubing produced in this manner is very low to those who are paying a selective premium, and those who do not pay a selective premium obtain better made tubing at no additional cost.

At this time we are concentrating on a lime soda glass with a thermal expansion rate of .91 x 10^{-7} C; any reasonable wall weight, and diameters from 3 throughout 20 mm.

We are anxious to send you a trial order or work with you on your special requirements. We are able to serve you promptly, and to give you the individual attention needed in a high specialized field. Send us your requirements.

Dunbar Glass Corporation
DUNBAR, WEST VIRGINIA
NEW YORK-CHICAGO-CLEVELAND-LOS ANGELES

If you write maker identify as IEN - 5369

HAND HYDRAULIC PUMP

Single and Double Designs to 20,000 PSI

With or without Reservoir

Standard Reservoirs 70, 160, 910 Cu. In. Capacity

Interchangeable Pistons ⅜ - ½ - ¾ Inch

1-inch Piston (Special)

Pipe connections ¼" N.P.T.

Handle length is 18 inches

Unit can be bolted or welded into position

"We specialize in hand pump units to operate in temperatures from minus 65° F to plus 160° F and with any capacity reservoirs required."

The single pump with ½" or ¾" piston now available in stainless steel.

WILLIAM S. PINE
1635 E. 22nd St., Los Angeles 11, Calif.

If you write maker identify as IEN - 5370

2000...6000 PSI HYDRAULIC PRESSURE
From Your Shop Air Line

With this WATSON-STILLMAN Double Acting Air Engine Pump

A compact, lightweight hydraulic pump for many applications:

- For Hydrostatic testing
- As a pumping unit for all types of hydraulic service
- To operate hydraulic jacks or machinery
- To fit your special hydraulic applications

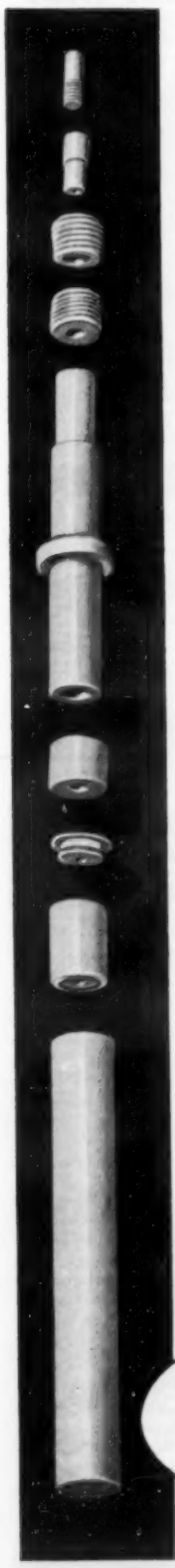
Simply connect the pump to your shop air line or field compressor. Operates on pressures from 50 to 150 psi.

Write today for Bulletin A-5

WATSON-STILLMAN FITTINGS DIVISION
H. K. PORTER COMPANY, INC.
Roselle, New Jersey

2-A

If you write maker identify as IEN - 5371



Quality Controlled

TEFLON and KEL-F STOCK and PRECISION FABRICATED PARTS

U.S.G. Quality Control extends through every operation from Powder to Part. It insures uniform electrical, chemical and physical characteristics of the highest quality. And it assures uniform density and dimensional stability permitting superior accuracy and dependability in the finished part.

Get the advantages of these fluorocarbon plastics at their best—fabricated by U.S.G.

Whatever your requirements—sheets, rods, tubing, bars, cylinders, tape, beading, extruded shapes, or parts machined or molded to your specifications, see U.S.G.

Write for bulletins No. 300 and No. 500.

UNITED STATES GASKET COMPANY
CAMDEN 1 • NEW JERSEY
FABRICATORS OF duPont TEFLON, Kellogg KEL-F AND OTHER PLASTICS
Representatives in Principal Cities Throughout the World

If you write maker identify as IEN - 5373

BUILDING . . Prefabricated steel, supplied in 40-ft. span, 20-ft. bays

Source: UNITED STEEL FABRICATORS INC.
333 Gasche St., Dept. IEN, Wooster, Ohio

Can be joined at the eaves

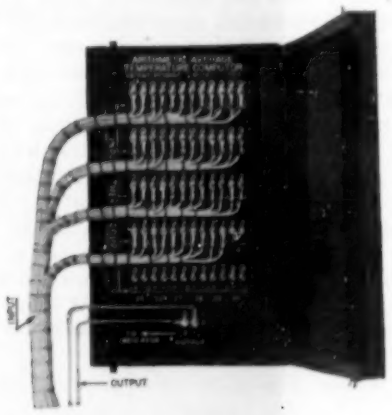
The rigid frame in this new USF Clear-Span building provides 40-ft. width clearance, 14-ft. height clearance, to the eaves, and can be ordered in 20-ft. length increments. A clip-and-wedge design assists in erection and attachment of the sheets so there are no holes through the sheets. Accurate fabrication, prior to delivery, eliminates fitting work in the field. A special insulation clip permits attachment of 24-in. hardboard insulation for the roofing or side walls.

In normal assembly, the sides and roof are covered with 24-gage box corrugated galvanized sheets with corrugations measuring 1 in. in depth and 4 in. on centers. Doors, measuring 20 by 14 ft., can be located at any side bay or centered in the end of the building. The doors are split at the center, each half opening separately. Access doors, plain or glazed, measure 3 by 7 feet. They can be provided in any side bay or end. Windows are located in the upper or lower half of the sides or ends to specification. Overhead lighting is available by specifying box corrugated plastic roof sheets in the upper half of each side of the roof.

If you write maker identify as IEN - 5374

CALCULATING . . Temperature computer averages several thermocouple readings

Source: AERO RESEARCH INSTRUMENT CO.
1901 N. Hermitage Ave., Dept. IEN, Chicago 22, Ill.



For test applications

Leads from a maximum of 30 thermocouples are brought into the connection panel in this new computer. Two output leads are connected, at binding posts near the bottom of the panel, to a pyrometer. The pyrometer reads the average temperature of all the thermocouples without need for calculation on the part of the operator. Two assemblies are available, one with capacity for 5 to 20 thermocouples and the other with capacity from 5 to 30 thermocouples. Installation can be made so that each thermocouple is read individually or the average is shown on the indicating instrument supplied by the user.

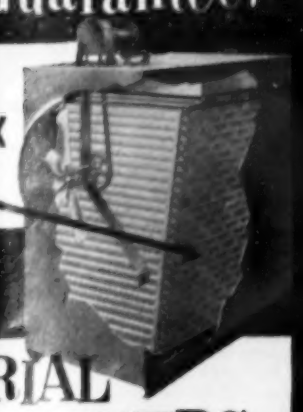
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5375

ONLY HALSTEAD & MITCHELL OFFERS

20-Year Guarantee!

ON THE WETTED DECK SURFACE



HM 2 thru 100 Tons

INDUSTRIAL COOLING TOWERS

Extras in Quality . . . offered only by Halstead & Mitchell . . . the famous 20-Year Guarantee on the wetted deck surface against rotting by fungus attack . . . Stainless Steel fans and shafts . . . sheet-steel cabinets, five times protected.

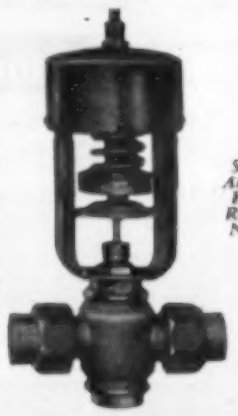
Write for Literature

AT LEADING WHOLESALERS EVERYWHERE

HM *Halstead & Mitchell*
704 BESSEMER BLDG., PITTSBURGH 22, PA.

If you write maker identify as IEN - 5376

4-WAY USEFULNESS! ...with SYLPHON Automatic Pressure Regulators



Sylphon Automatic Pressure Regulator No. 991.

● Sylphon Pressure Regulators reduce from high to low pressure . . . or assure constant pressure when fluctuating supply pressure is encountered. When equipped with proper valve, they can be used as pressure relief valves (Nos. R-991, R-992) to protect other equipment against excessive pressures. May also be used as "bellows motor" control valves in pneumatic or hydraulic control systems. All-metal. Stainless steel frame. Improved stem packing. Self-operating, no pilots or pistons. Write for Catalog JN-D.

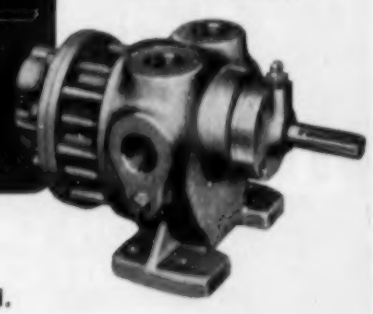
Robertshaw-Fulton CONTROLS COMPANY

FULTON SYLPHON DIVISION • KNOXVILLE 1, TENN.

If you write maker identify as IEN - 5377

ROPER SERIES F

WITH 4-PORT DESIGN FOR 8 OPTIONAL ARRANGEMENTS



PUMP CLEAN LIQUIDS OF ALL KINDS AT PRESSURES TO 300 P.S.I. . . . 1 to 300 G.P.M. SIZES

Mechanical Seal
Ideal where repacking is not convenient.

Pumps that give *positive power* for hydraulic circuits. Installation time and design problems reduced because 4-port feature offers eight optional piping arrangements (4 for CW and 4 for CCW rotation). Supplied with or without relief valve . . . with packed box or mechanical seal.

Send for Catalog
GEO. D. ROPER CORP.
205 Blackhawk Park Ave.
Rockford, Illinois

ROPER *Rotary Pumps*

If you write maker identify as IEN - 5378

JOHNSON wide-rehandling clamshell

EASY-CLOSING
big-diameter sheaves, with sealed-in needle bearings, reduce friction losses, deliver full power to cutting lips. Light weight, sturdy bucket assures big payload performance in loose materials.

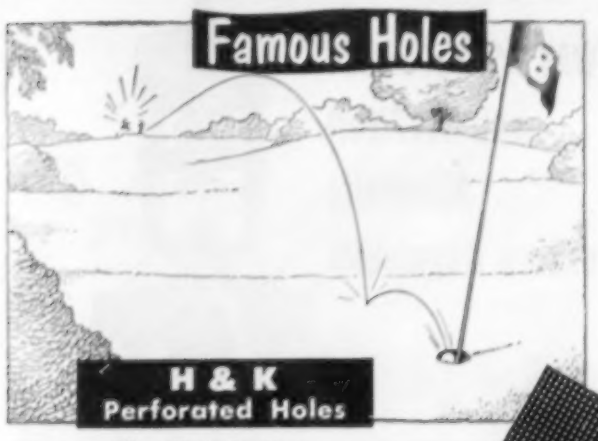
ALL-WELDED
smooth, fast cleaning. Hard manganese cutting edge welded to lips toughens with use. 10 Wide Rehandling sizes: ⅜ - ½ - ¾ - 1 - 1¼ - 1½ - 1¾ - 2 - 2½ and 3 cu. yds.

Other Johnson types: General-Purpose and Heavy-Duty Digging.

MAIL TODAY

to: C. S. JOHNSON Co. CHAMPAIGN, ILLINOIS (Koehring Subsidiary)
Send complete facts on .....cu. yd. Wide-Rehandling Clamshell Bucket.
NAME _____
COMPANY _____
STREET _____
CITY, STATE _____ 3849 IEN

If you write maker identify as IEN - 5379



The Hole-in-One

Once in a lifetime — and only to a few will come this exhilarating experience. The rest of us will have to be satisfied with an occasional "deuce".

To those who require many holes, accurate in size and shape, uniformly spaced over the whole or restricted areas of sheets and plates, we have the answer. For 70 years we have devoted our efforts to the business of perforating sheets and plates of all the metals as well as plastics, hardboard and even plywood. Holes so small that there are nearly a thousand to a square inch. Holes the size of marbles, of golf balls, baseballs — even basketballs. Holes that are square, slotted, triangular and ornamental.

Whenever you require perforated materials, send us your specifications, because —

If it can be perforated, H & K can do it!

The Harrington & King Perforating Co.

5637 Fillmore St., Chicago 44, Ill.
114 Liberty St., New York 6, N. Y.

Our Catalog No. 62 sent gratis on request.

If you write maker identify as IEN - 5380

At Last!
The first
TRULY PORTABLE
ELECTRONIC SCALE
20 TON CAPACITY
in "BRIEF CASE" SIZE

Carry it where you need it... weighs only 35 lbs.

Faster, easier weighing at lower cost

You can weigh large loads anywhere, with this lightweight, high-capacity weight indicator. Take it from place to place—carry it like a brief case—or, if you wish, install it for permanent operation. Dial may be placed at the work or connected through extension cord for remote reading. Nothing to get out of order—no vacuum tubes, no fragile parts. Unaffected by temperature, weather or rough usage. Recordings are instantaneous and accurate.

This radically new and efficient weight indicator offers endless opportunities for time and cost savings in materials handling and processing. Think of the possibilities in *your* work!

Send for complete literature. Engineered applications also available for built-in installations.

CONTROL CELLS CORPORATION
511 North Hillside
Wichita 6, Kansas

Control Cells

CONTROL CELLS CORPORATION
Research Department
511 North Hillside, Wichita 6, Kansas

Please send me complete information about your new Electronic Scale.

Name.....
Position.....
Firm.....
Address.....

For Your Special Information

ALL MAKERS ARE LISTED IEN S-10

We visited one of the "front" engineering organizations, an outfit that builds new plants, modernizes old ones, brings operating methods up to date. This organization does all of its own design work, picks all of the things that go into its immense engineering activities.

There is a table in the center of its engineering reference library. On the table is the 1954 Thomas' Register. Around this table, in orderly aisles, are rows upon rows of reference literature on thousands of products.

We visualize normal procedure by the engineers who visit that library to find sources for the things they are going to specify and to look up data after their choice is made.

First they go to the table and look in Thomas' Register. They make notations of the product manufacturers' names. Then they use these notations to look up existing literature on the library shelves. If this literature turns out to be more than a few months old they ask their purchasing department to secure new copies. In any event, source action starts with that Thomas' Register center table.

For $15, plus handling charges, you also can have the Register to find all of the sources for all of the things you need, plus basic product information that often makes it unnecessary to consult any additional literature.

EXPOSITIONS IEN S-11

The Basic Materials Conference and Exposition opens its second annual show at the International Ampitheatre in Chicago on May 17. The show and conference sessions continue through May 19th. Clapp & Poliak Inc., 341 Madison Ave., New York 17, N. Y., is in charge.

The National Office Management Association is holding its 35th International Conference and Exposition at the Keil Auditorium in St. Louis from May 24th through 27th. Denham & Company, 925 Book Bldg., Detroit 26, Mich. is in charge.

The American Society for Quality Control holds its 8th Annual Convention at the Jefferson Hotel in St. Louis on June 9th through 11th. There will be 72 meeting sessions and 5 plant tours. The convention will include space for exhibitors and a booth for books on the subject. Mr. U. C. Gramsch, Registrar, P. O. Box 4436, Wade Station, St. Louis 15, Mo.

The Western Plant Maintenance Show opens in the Pan Pacific Auditorium in Los Angeles from July 13th through 15th. There will be a combination of technical sessions and an exhibit patterned on the highly successful Maintenance Show held in Chicago earlier in the year. Clapp & Poliak Inc., 341 Madison Ave., New York 17, N. Y., is in charge.

Society of the Plastics Industry is ready with its 1954 Exposition at the Public Auditorium in Cleveland on June 7th through 10th. Exhibitors will include molders, laminators, extruders, coated fabric processors, raw materials suppliers, equipment manufacturers, tool die and mold makers.

If you write maker identify as IEN - 5382

Everything You Need — to CLEAN SOLDER FITTINGS FASTER and BETTER

Mill-Rose CLEAN FIT Tube Cleaner
3/8", 1/2", 3/4", & 1" (No. 6200)

Mill-Rose CLEAN FIT Kit
Knurled holder, bracket, crank, 1/2", & 3/4" brushes (No. 6003)

- Ring-type wire brush cleans the outside of tube ends to right length, fast. For tubes up to 1".
- Handy kit cleans fittings quickly. Interchangeable brushes (1/2" & 3/4") with speedy crank or knurled holder. Other brushes available from 1/8" to 2".
- For tubes over 1", use long-wearing CLEAN FIT Abrasive Cloth.

Write for prices and catalog EN-54.

MILL-ROSE
THE MILL-ROSE CO.
1985 East 59th Street
Cleveland 3, Ohio

If you write maker identify as IEN - 5383

Terminal Boards...
Made to Customer Print Specifications

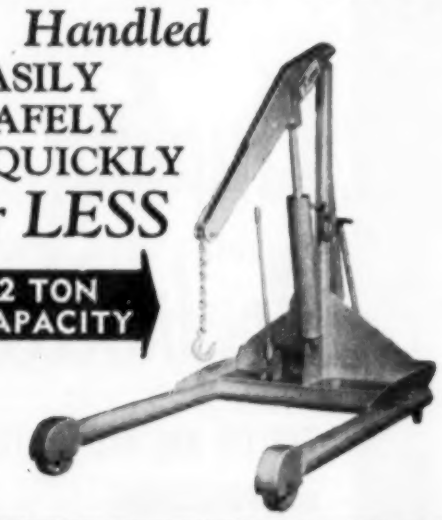
Quality boards in *any* quantity. Made of certified materials to all JAN and MIL specifications — cloth, paper, glass, melamine, silicone, etc. Fungus treating either spray or vacuum processing. Silk screen or engraved lettering. Etched circuitry to print. *24-hour service on quotations. Prompt deliveries.* Complete line of electronic hardware. Write today.

U. S. ENGINEERING CO.
521 COMMERCIAL STREET • GLENDALE 3, CALIFORNIA

If you write maker identify as IEN - 5384

BULKY, AWKWARD, HEAVY LOADS
Handled
• EASILY
• SAFELY
• QUICKLY
for LESS

2 TON CAPACITY

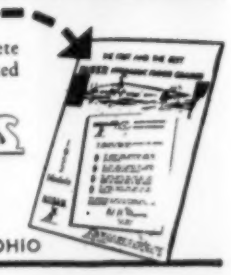


SUBSTITUTE FOR AN ELEPHANT

GET THIS BOOK

Gives all the facts about Ruger's complete line of hydraulic floor and truck mounted cranes, capacities 1000 to 6000 lbs.

RUGER CRANES



613 West Fourth St. UHRICHSVILLE, OHIO

If you write maker identify as IEN - 5385

Discover Why Pemco Wheels and Casters KEEP Rolling!

Write today . . . you'll receive by return mail our New Catalog

. . . In it you'll see why so many users of wheels and casters are choosing Pemco. Large or small, your requirements too can be handled with greater success by Pemco.

Advantages for You

For example, Pemco Wheels are distinguished by a unique solid metal hub which gives far greater rigidity, ability to absorb shock loads, and ease of operation with minimum wear. Pemco Casters feature two rows of load carrying balls for closer alignment, easier operation.

Let us put complete facts and specs in your hands — request our catalog today.

PEMCO WHEEL CO.
1881 Ravine Road
Kalamazoo, Mich.

If you write maker identify as **IEN - 5386**

It's like having your own motor department

We would like to share our facilities and knowledge with you. If you're trying to fit a standard motor to a custom job — if you want special characteristics in your motors . . . then you want Peerless Electric. It's like having your own motor department.

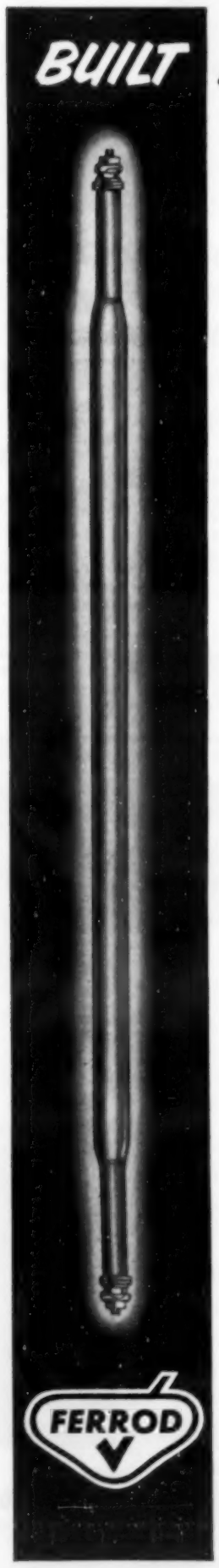
Peerless engineers work with your engineers to give your motors the electrical and mechanical qualities you require. And, because of our size, we can make minor changes later without trouble.

To get started, call Peerless . . . ask for me. I'll have you talk to the man who can help you most. You can have custom motors at a competitive price — PEERLESS GOLD SEAL MOTORS.

Robert Gamble
President

THE PEERLESS ELECTRIC CO. • W. MARKET ST., WARREN, OHIO
MOTORS FANS BLOWERS

If you write maker identify as **IEN - 5387**



BUILT LIKE A STEEL GIRDER!

FERROD'S NEW

HEAVY-DUTY

STRIP HEATERS

If you use electrical heating in any form, you'll be interested in this new development. Formed like a modified "T"-beam, the broad flat heating surface is kept flat by a rigid reinforcing "spine" up the back.

•

Available with *mild steel* or *Inconel* sheath, these units cover a wide range of applications, the *Inconel* being particularly corrosion resistant and operating at sheath temperatures up to 1500° F.

•

As in other Ferrod *rod-type* heaters, the nickel chromium resistor elements are precisely located, insulated with magnesium oxide, then flattened under tremendous pressure.

•

Over-all heater width of ⅝" gives fast response in heating, also permits close control of temperatures where required.

•

Made in capacities of 150 to 2500 watts with steel sheath —and from 350 to 5000 watts with *Inconel* sheath—Ferrod HD Strip Heaters can be safely operated in series on supply voltages of 480 volts.

•

For further details and complete specifications on standard units quickly available, write

FERROD MFG. CO.
606 N. River St.
Batavia, Illinois

Subsidiary Hexcel *Corporation*

If you write maker identify as **IEN - 5389**

TRUCK . . Hydraulic power lift rates to 1,250 pounds, 6-volt battery

Source: SAFWAY INDUSTRIAL EQUIPMENT CORP.
184 N. Franklin St., Dept. IEN, Chicago 6, Ill.

Ask for bulletin

Model EL20 is new addition to the company's Lift-Master line of battery powered hydraulic trucks, previously described IEN-9401-53. The new unit can be employed as a fork lift, straddle lift, platform lift or drum stacker. Lift height is to 68 inches. Conversion is made from forks to platform by snapping a plate into position.

Construction includes a built-in charger and charging rate meter with automatic cut off. The truck is mounted on 5-in. rear swivel casters and on wheels built into the feet extending to the front. List price is $795.

If you write maker identify as **IEN - 5390**

PIPE . . Polyvinyl chloride plastic in 4 ft. length, 6 to 14 in. diameter

Source: KAYKOR INDUSTRIES INC.
Dept. IEN, Yardville, N. J.

Chemically inert

Vyflex Rigid designates the company's polyvinyl chloride tube and duct. It now is available in 6, 8, 10 and 14-in. inside diameters and in 4-ft. straight lengths. The pipe is made of unplasticized and unmodified polyvinyl chloride to provide resistance against attack by chemicals. It has first class physical properties. Typical applications are in waste lines, exhaust ducts, feeder lines. Several joining methods can be employed to produce multiple length installations.

If you write maker identify as **IEN - 5391**

POLISHING . . Abrasive rubber made in blocks, rods, sticks, wheels

Source: WELDON ROBERTS RUBBER CO.
Sixth Ave. & N. 13th St., Dept. IEN, Newark 7, N. J.

Coarse, medium, fine

Silicon carbide is employed as the abrasive in new design of the Brightboy series of rubber cushioned blocks, rods, sticks, wheels. The line now includes both silicon carbide and aluminum oxide units in a range of abrasive grain sizes. Application is in removing tool marks from forged aluminum, smoothing weld marks, polishing and burring stainless steel. The cushioned abrasive can be employed on metals, plastics, laminated materials. The wheels range from ½ to 6 in. in diameter and from ⅛ to ¾ in. in thickness.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 5392**

INDUSTRIAL PRECISION CLEANING MACHINE

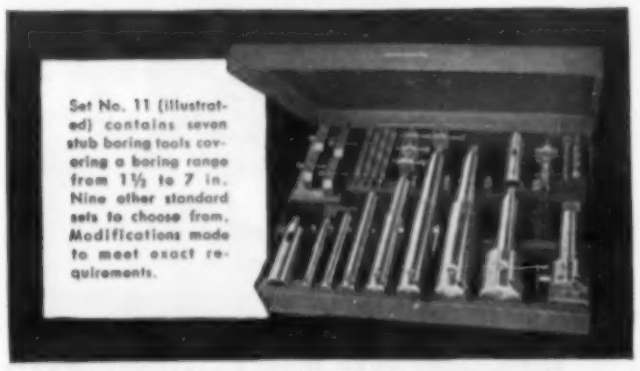
For more than a decade industry has cleaned its smallest, most precise metal parts in this machine that employs the famous L&R Centrifugal Cleaning Action. In the Work Basket, measuring 3⅜" **deep by** 5½" **I. D., typical** parts, like **those shown can be** cleaned, rinsed, **polished and dried** in less **than ten minutes — with** three sets **of parts separated by** use of triple **nesting baskets** shown above. **To eliminate a major** production **headache, order your** L & R Industrial **Cleaner today, or** write for **further catalog information.**

Price complete ____ **$262.50**

L & R Manufacturing Co. • 575 Elm St., Arlington, N. J.

If you write maker identify as **IEN - 5393**

Increase productivity — with your present machine tools



Davis "Super Micrometer" stub boring tool sets give you greater machine use, eliminate cut-and-try boring. They are extremely rugged, adjustable to .0001 in.

Speed heavy boring assignments from ⅛ to 7 in. diameter and light, extended boring up to 13 in. diameter with these high precision tool sets.

Available for almost immediate delivery, sets are equipped with high-speed steel cutters. Other cutters furnished on request. Some sets include offset boring heads, pencil boring heads and reducing sleeves . . . plus setup items.

See your representative or write for details.

If Davis can't bore it — it can't be done

DAVIS BORING TOOL DIVISION
GIDDINGS & LEWIS MACHINE TOOL COMPANY
FOND DU LAC, WISCONSIN

If you write maker identify as **IEN - 5394**

***Call your* INDUSTRIAL DISTRIBUTOR** *for prompt, dependable, quality service to match the quality and dependability of Starrett products.*

When it comes to precision measuring tools — the tools that set your company's standard of accuracy — you have complete confidence in Starrett. It is the name you specify, the name you look for before all others on tools you trust. Starrett makes more than 5000 fine tools for every precision measuring need . . . 5000 opportunities to buy with confidence through a convenient and reliable source of supply — your Industrial Distributor.

Starrett
"WORLD'S GREATEST TOOLMAKERS"
MECHANICS' HAND DESIGNED TOOLS AND PRECISION INSTRUMENTS . DIAL INDICATORS . STEEL TAPES PRECISION GROUND FLAT STOCK . HACKSAWS, BAND SAWS and BAND CUTTER
THE L. S. STARRETT COMPANY, ATHOL, MASSACHUSETTS, U. S. A.

If you write maker identify as **IEN - 5395**

Design Data on Plastic Laminates

The *Synthane* catalog is a good source for engineering data on laminated plastics. 31 different grades of *Synthane* are described in detail; their properties and recommended uses are given.

In addition to engineering data, the catalog supplies quick reference information on available grades of *Synthane* sheets, rods, tubes, molded shapes and fabricated parts, and do's and dont's in design for using plastics. Whatever you need in laminated plastics, the *Synthane* catalog can help you find the answer. To get your copy, use the coupon below.

SYNTHANE
SYNTHANE CORPORATION
SOUTH RIVER ROAD, OAKS, PENNA.
Manufacturers of Laminated Plastics

Please send me a copy of the Synthane catalog.

Name _____

Address _____

City _____ (zone) _____ State _____

If you write maker identify as IEN - 5396

PUMP PAINT DIRECT

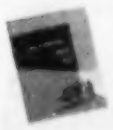
from mixing room to spray booths!

WITH ALEMITE VERSATAL PUMPS

save time, save money . . .

cut paint handling in half!

- ★ Eliminate delays and downtime – mismatching – fire hazards.
- ★ One Versatal Pump can supply as many as six spray heads – delivers up to 27 gallons per minute!
- ★ Open-frame design separates pump from air motor – no fouling. Piston is self-oiling.



FREE idea book. How Versatal methods can help solve your production problems. Write Alemite, Dept. 8-54, 1830 Diversey Parkway, Chicago 14, Illinois.

ALEMITE Versatal

If you write maker identify as IEN - 5397

Safer!

No Slippage with a NEWCO Wire Rope Clamp!

Holding Efficiency 95% to 100% of Catalog List: Simple to Install

It's safe! It's strong! The Newco Wire Rope Clamp and Thimble bearing surface is five to ten times greater than a pressed steel thimble. Eye opening larger than that of standard thimble. Users report greater holding efficiency than "U" bolt type clips. Reduces down time. Maximum protection to wire rope. Simple to install, no special tools needed. *Lasts up to three times longer!* Used by leading companies throughout the nation. Names on request. Compare the Newco Wire Rope Clamp with any other on the market . . . and you'll choose Newco.

Here's the Secret!

Locking construction, patented by Newman, automatically *forces clamp to hold tighter when load gets heavier.* IMPOSSIBLE TO SHEAR BOLTS OFF, because wire rope pressure pushes keying sections closer, preventing movement of bolts up and down.

Get all the facts . . . specifications, details, prices . . . on the Newco Clamp now. See your Distributor or write direct.

wire rope NEWCO CLAMP

Newman Manufacturing & Sales Company

Dept. 101, 205 Westport Rd., Kansas City 11, Mo.

If you write maker identify as IEN - 5398

with **AURAND CLEANING TOOLS**

Clean off accumulation of scale, paint, rust or any foreign matter from any hard surface with Aurand Cleaning Tools. Toothed cutting wheels, loose pinioned on rotating head chip away accumulations at high speed. Positive depth shoe prevents cutting into permanent surface and assures uniform cleaning of entire area.

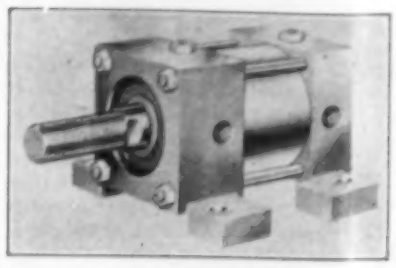
FOR FULL DETAILS, WRITE DEPT. 649

AURAND MFG. & EQUIP. CO.
2643 Colerain Avenue • CINCINNATI, OHIO

If you write maker identify as IEN - 5399

CYLINDER . . Pneumatic design, double acting, pressure to 200 pounds

Source: S-P MFG. COMPANY
12415 Euclid Ave., Dept. IEN, Cleveland 6, Ohio



Catalog 109

The company announces general availability of its line of heavy duty double acting air cylinders in eight bore sizes from 1½ to 6 in. and stroke to specification. Construction includes a cartridge type combination rod packing and bearing, a piston fitted with cup packings, provisions for plain or cushioned action at one or both ends.

Each end plate is fitted with two ports to assist in piping and to provide high speed operation when both ports are connected in parallel. The barrel is made of seamless steel tube with honed interior. The end plates are steel. O-rings seal the connections. The line includes five types of mounting. All are shown and dimension tabulations are included in a catalog the company has prepared on the subject.

If you write maker identify as IEN - 5400

VENTILATING . . Panel mounted fan for exhaust duty in a wall or window

Source: M & E MFG. CO.
2571 Winthrop Ave., Dept. IEN, Indianapolis 5, Ind.

Resists corrosion

Illustrated is new assembly of the company's motor driven exhaust fan, previously described IEN-424-53, and a sheet metal panel to mount in a window opening or an exterior wall. The equipment is available with a 12 to 42-in. fan for intake through a circular guarded opening and exhaust through the collar in which the fan is assembled directly to the outside or to a suitable exhaust duct. The belt connected motor is enclosed near the top of the panel where it is accessible through an inside hinged door.

Smallest 12-in. assembly employs a panel measuring 14¾ by 26 inches. The largest 42-in. unit has a panel measuring 46 by 63 inches. Rating is 900 to 26,500 cfm. of free air.

If you write maker identify as IEN - 5401

Nylon cord is now available from Fox Edge Co., 2120 Middlesex St., Dept. IEN, Lowell, Mass., for use as lacing in hand bags, foot wear, millinery, toys, novelties. It has been developed as a replacement for round leather lacing. It is suited for use as a starter rope for outboard engines, engine-driven mowers and farm equipment. Number 3 rates 600 lb. in tensile strength and has 35 per cent stretch under a 550-lb. load. The cord is available plain or in colors, on spools or in cut lengths to meet requirements.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5402

ANY AIR . . . ANYWHERE . . . foul or moist, stale or dry, smoky or gaseous . . it's up and out quickly with a Muckle Vent. Proven performance of Muckle Vents guarantees superior efficiency on any building, under any conditions. Architects and builders who compare specify reliable Muckle Vents. For greater working efficiency or controlled customer comfort . . you can depend on Muckle Vents. Streamlined, propeller driven, roof mounted . . motor out of air stream . . 15 sizes - 254 CFM to 10280 CFM. Write today for FREE Application information

Muckle

MOISTURE IS NO PROBLEM
Remove moisture filled air with maximum efficiency.

MANUFACTURING COMPANY
OWATONNA 33, MINN.

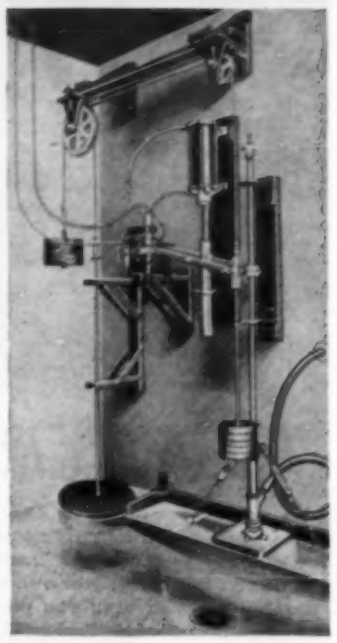
If you write maker identify as IEN - 5403

Recover Valuable Oil!

STOP OILY-WASTE POLLUTION

The new Simplex Oil Skimmer reclaims oil that is ordinarily discharged along with other trade wastes. It can quickly pay for itself in three ways . . . recover valuable oil, conserve water, prevent stream pollution.

Operation is completely automatic! The float moves with the level of liquid in waste tanks . . . keeps the lip of the skimming trough the desired fraction of an inch below the surface at all times. Floating oil flows over the trough-lip and is sucked up through hose to reclaiming tank.



Write for Free Brochure!

Simplex Valve & Meter Company
6717 Upland St., Philadelphia 42, Pa.

SIMPLEX®
VALVE AND METER COMPANY

If you write maker identify as IEN - 5404

FOR SHARP, CLEAN, LEGIBLE PRINTS

direct from pencil tracings, turn to TURQUOISE. Precision grading, super bonded point strength and sealed-in smoothness speed your hand. *Electronic graphite, refined down to one micron (1/25,000"), makes lines so opaque and uniform they reproduce perfectly.

WANT PROOF? Take advantage of our free offer and make the Print Test yourself.

SEND FOR FREE SAMPLE pencil or lead, naming this magazine, your dealer and grade desired, 6B to 9H.

EAGLE "CHEMI-SEALED" TURQUOISE PENCILS • LEADS LEAD HOLDERS

EAGLE PENCIL COMPANY • 703 EAST 13th STREET, NEW YORK
EAGLE PENCIL COMPANY OF CANADA, LTD., TORONTO

If you write maker identify as IEN - 5405

How to whip your relay problems!

Just call **ADVANCE...** *we're ready and willing to make the relays you need.*

CONTACTS, *for example*

Say the word and we'll up the sizes . . . switch from fine silver to tungsten, palladium, silver-cadmium oxide, gold contacts, or . . . you name it!

INSULATION

Laminated phenolic, silicone glass, ceramic steatite, linen-base bakelite, or . . . you name it!

ANYTHING SPECIAL

ADVANCE will engineer, develop and produce the custom relays you need in minimum time. Call ADVANCE for action.

FOR INDUSTRY

We build a vast variety of rugged, reliable relays. You'll find our quality control is now the tightest in the field.

ADVANCE RELAYS

Write—and let us solve your relay problems.

ADVANCE ELECTRIC AND RELAY CO.
2435-J NORTH NAOMI STREET • BURBANK, CALIFORNIA

If you write maker identify as IEN - 5406

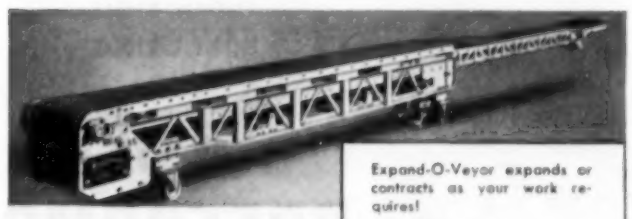
Model 450 removing sawdust at the Davis warehouse

Davis Plywood Corp. of Cleveland, Ohio, avoids the dust problem in its ultra-modern warehouse by using a Model 450 Invincible Vacuum Cleaner. If dust collected on their stored plywood, it would mar its highly finished surfaces. Manual sweeping cannot do the job, since it causes much of the dust to rise, and then resettle on the plywood, floors, bins and beams. But as the Davis warehouse superintendent reports, "The Invincible unit *traps all the dust* inside the vacuum cleaner. It does a better job faster."...This installation is typical of thousands in all major industries where Invincibles have licked dust problems.

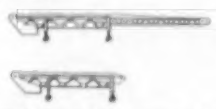
WRITE FOR ILLUSTRATED FOLDER

INVINCIBLE VACUUM CLEANER MFG. CO.
DOVER, OHIO

If you write maker identify as IEN - 5407



Expand-O-Veyor expands or contracts as your work requires!



Eliminates lost time caused by shifting equipment!

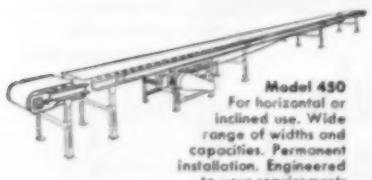
Where can *you* use this new FARQUHAR Package-Handling *EXPAND-O-VEYOR*?

Use this new Farquhar Expand-O-Veyor at maximum length settings one day . . . at minimum the next day. Ideal for use on the end of a fixed conveyor system, permitting the discharge point to be varied without moving your entire line. Perfect for loading and unloading trucks —can be shortened or expanded as the truck becomes loaded or emptied. Get more information about this new Expand-O-Veyor's versatility today. Write to the address shown below, telling us what you move. There's no obligation, of course.

FARQUHAR HAS CONVEYORS FOR EVERY PURPOSE

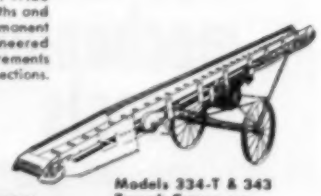
Model 431
Rugged, medium duty package-handling conveyor. Portable or fixed units. Horizontal or inclined. Various mountings.

Models 436 and 438
For light or medium duty. Permanent or portable installations. 12" to 18" belts.



Model 450
For horizontal or inclined use. Wide range of widths and capacities. Permanent installation. Engineered to your requirements from standard sections.

Gravity Conveyors
Roller or Wheel type. Black velvet or Standard finish.



Models 334-T & 343 Trough Conveyors
For handling bulk, abrasives, powders, aggregates, etc., as well as small bags and bundles.

OLIVER Farquhar CONVEYORS

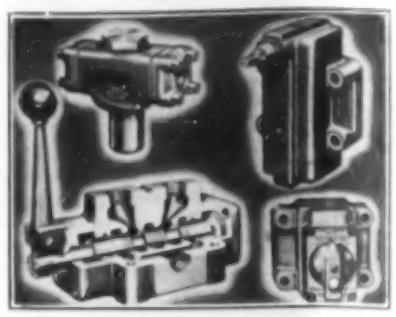
FREE! "Owners Report"—a booklet of case histories describing money-saving Farquhar conveyor installations. Write: THE OLIVER CORPORATION, *A. B. Farquhar Div.*, Dept. Y-32, York, Pa.

POWER-BELT & GRAVITY CONVEYORS

If you write maker identify as IEN - 5409

VALVES . . For hydraulic operation and control, 2,000 and 3,000 pounds

Source: HYDRAULIC PRESS MFG. CO.
Marion Road, Dept. IEN, Mount Gilead, Ohio



3,500 basic models

The company has announced a new line of hydraulic operating valves and valves for relief, sequence operation, unloading, pressure reducing, counterbalancing, flow control and check. All are available in pressures to 2,000 and 3,000 pounds. Line includes approximately 3,500 basic models. Sizes range from ¼ to 1½ in. for 2,000-lb. operation and from ½ to 2½ in. for 3,000-lb. service.

The operating line includes a floating lever on directional valves, O-ring seals on each end of the valve body, passages designed to prevent pressure drop through the valve, long bearings on the valve body and spool to prevent binding, selectively fitted spools, machine inlet and cylinder ports, interchangeable end caps. These valves are available in threaded, flanged and gasket mounted types and can be supplied for manual, cam, foot, solenoid, oil or air pilot operation and in any one of six spool styles. Standard types of control include stem, knob, lever and a new quadrant lever locking device.

The new line is presented in three catalogs, No. 801 covering 2,000-lb. valves with sub-plate connections, No. 821 for 3,000-lb. valves with flange connections and No. 841 for 3,000-lb. sub-plate valves, all in a number of designs.

If you write maker identify as IEN - 5410

SEALING . . Silicone rubber vulcanizes at room temperature

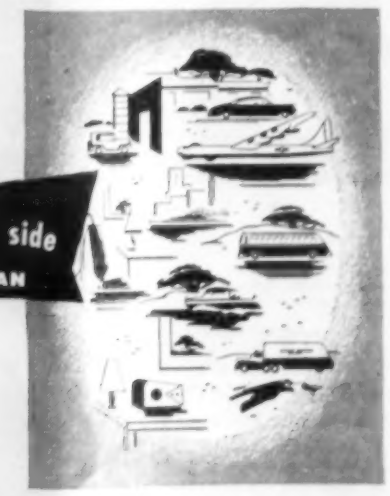
Source: DOW CORNING CORP.
P. O. Box 592, Dept. IEN, Midland, Mich.

For sealing, glazing, coating, casting

Silastic RTV is a new two-component silicone rubber. It is shipped and stored in separate components, each containing a catalyst. When the two are mixed in equal parts, by weight, they react to form a non-heat vulcanizing material that sets in about 4 hr., cures in 24 hr. and develops optimum properties in 4 to 7 days. The material cures without heat, pressure, or full exposure to the air in sections to ⅛ in. in thickness. Sections to 1 in. can be cured under pressure to 50 pounds. Curing time can be shortened if heat is applied after the rubber has set.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5411



CASTINGS on the lighter side by WELLMAN

Chances are no matter what business you're in, there's a WELLMAN aluminum or magnesium casting somewhere in the picture.

For almost half a century, our four complete plants and experienced personnel have been producing castings on the lighter side to meet many requirements.

Let us hear from you, or write for our new catalog No. 53.

Well-Cast MAGNESIUM AND ALUMINUM CASTINGS
Well-Made WOOD AND METAL PATTERNS

THE WELLMAN BRONZE & ALUMINUM CO.
Dept. 9, 12800 Shaker Boulevard Cleveland 20, Ohio

If you write maker identify as IEN - 5412

HEVI DUTY ELECTRIC COMPANY

FOR TEMPERATURES FROM 1700° F. TO 2600° F.

Use The

HEVI DUTY G-05-PT FURNACE

Inside Diameter 4⅛"W.x7"L.x2¾"H.
3500 WATTS
Write for Bulletin LAB-250A

- ☆ Less Heat Loss — Improved Insulation and No Rheostats
- ☆ Better Control — Through a 48 Step Tap Changing Transformer
- ☆ Easily Replaceable Silicon Carbide Type Heating Elements
- ☆ Indicating Pyrometer and Tap Switches Mounted in Sliding Drawer

HEVI DUTY ELECTRIC COMPANY
HEAT TREATING FURNACES HEVI-DUTY ELECTRIC EXCLUSIVELY
DRY TYPE TRANSFORMERS — CONSTANT CURRENT REGULATORS
MILWAUKEE 1, WISCONSIN

If you write maker identify as IEN - 5413

WILLSON SAFETY SPECTACLES

Everything you want in
- PROTECTION
- COMFORT
- STYLE

STYLE WB—Bronze-color, non-flammable butyrate frame. Standard cable or spatula Hi-Line® temples. (With matching sideshields, Style WBS.)

STYLE A—Metal frame, on-line temples, with metal reinforcing bar or pearloid brow rest. (With sideshields, Style AS.)

STYLE AH—Sturdy, single-bridge metal frame with Hi-Line® temples. (With sideshields, Style AHS.)

STYLE AV—Modern metal frame with Hi-Line® temples, metal reinforcing bar. (With sideshields, Style AVS.)

STYLE WK—Flesh-color butyrate frame with spatula or half-plastic, half-cable temples. (With sideshields, Style WKS.)

ASK YOUR WILLSON DISTRIBUTOR to show you the Willson Sample Kit of Safety Spectacles which includes lenses, frames and sideshields available.

WILLSON

WILLSON PRODUCTS, INC.
217 Washington St., Reading, Pa.

If you write maker identify as IEN - 5414

CLEMENTS **Cadillac** IT BLOWS • SUCTION CLEANS • SPRAYS

PORTABLE ELECTRIC
COMBINATION BLOWER-SUCTION CLEANER

DO YOU WANT TO CLEAN FASTER, BETTER, EASIER AND AT LOW COST?

That's a big order, but the super-efficient CLEMENTS-CADILLAC cleaning tool can do it for you—has done it for industry, business and institutions everywhere . . . for more than 40 years.

Just ask your mill supply dealer, or write us for proof. No obligation on your part.

"Most Useful Tool in the Plant"

CLEMENTS CADILLAC COMBINATION BLOWER-SUCTION CLEANERS

CLEMENTS MFG. CO., 6620 S. NARRAGANSETT AVE., CHICAGO 38, ILL.

USED BY BUSINESS AND INDUSTRY FOR MORE THAN 44 YEARS

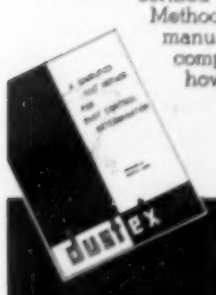
If you write maker identify as **IEN - 5415**

IMPRACTICAL!

. . . so is guessing
about your dust problems!

Actually, there is no need to guess about the scope of your dust problem or collection equipment needed for effective control. The most practical way to arrive at the solution to all dust problems is to apply the simple test method described in a new booklet, "A Simplified Test Method for Dust Control Determination." This manual gives you the facts on how to get a complete analysis of dust conditions and how to be sure of effective control.

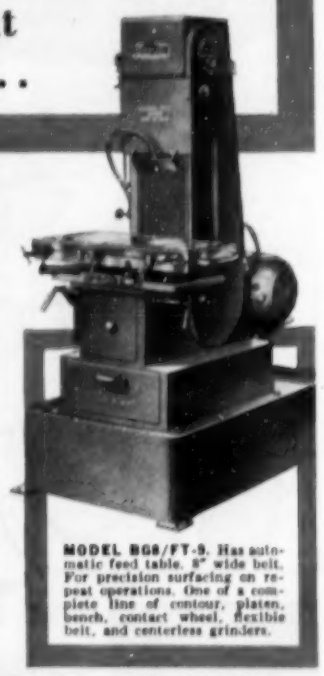
For your copy, just clip this ad to your company letterhead and sign your name and title.



dustex CORP.
1764 Walden Avenue
Buffalo 25, N. Y.

If you write maker identify as **IEN - 5416**

How to CUT COSTS with Abrasive Belt Grinding . . .



MODEL BGS/FT-S. Has automatic feed table. 8" wide belt. For precision surfacing on repeat operations. One of a complete line of contour, platen, bench, contact wheel, flexible belt, and centerless grinders.

Abrasive Belt Grinding does many milling, shaping, polishing and grinding jobs 30% *to* 80% *faster* than presently-used machines. Simplifies fixtures—often eliminates them entirely. Frequently saves 75% to 90% of former set-up time.

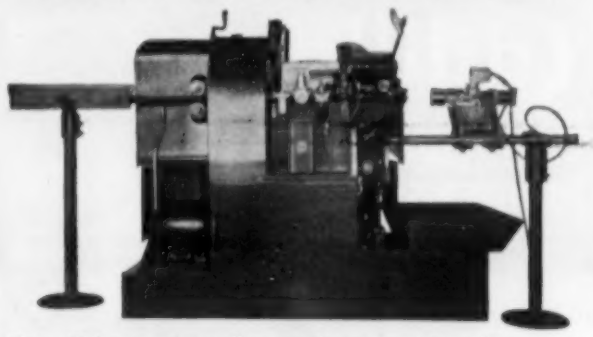
Let us prove that an Abrasive Belt Grinder can cut your machining costs. Send us sample pieces for recommendations—or ask to have one of our production engineers call to discuss your problems at your plant. Free 32-page case history booklet on request.

ENGELBERG

THE ENGELBERG HULLER CO., INC.
144 W. Fayette St.
Syracuse, N. Y.

If you write maker identify as **IEN - 5417**

MODERN CUTTING-OFF MACHINE



Cuts off longer pieces than regular automatic machines—*any length you want.* FAST cutting and chamfering of tubing, pipe, shafting. Check the following figures:

½" Tubing
Cuts and Chamfers both outside edges of ½" .030 wall tubing. 5" lengths, every 2.5 seconds.

1¼" Cold Rolled
Cuts and Chamfers both ends, 20" long, at rate of 1 every 20 seconds.

1" Tubing
Cuts and Chamfers both outside edges, pieces 3" long. One every 3 seconds.

These popular time saving machines are now available in 4 sizes, handling work up to 6½" O.D.

4" THREADED STUDS

Cut and chamfered at one time—in 8 Sec.—from 10 ft. length of stock already threaded (¼" U. S. Standard). Clean cut. Clean chamfer. Nuts start easily with no extra finishing required.

Write for Catalog

MODERN MACHINE TOOL CO.
JACKSON MICHIGAN

If you write maker identify as **IEN - 5418**

COUNTING . . Electronic instrument signals and resets at a preset total

Source: **ATOMIC INSTRUMENT CO.**
84 Massachusetts Ave., Dept. IEN, Cambridge 39, Mass.

For production control

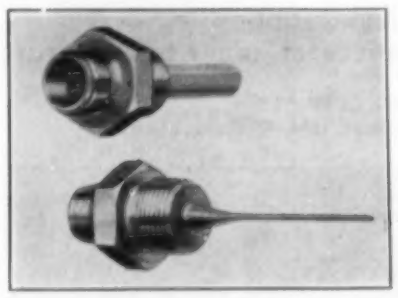
Illustrated is a 4-decade assembly of the company's Model-164 preset electronic counter. It has been designed particularly for production line use where it counts units to a predetermined total set by turning knobs on the panel face. Then it closes an actuating or signal circuit and resets itself to zero. At the same time it adds the count cycle to a 6-digit Veeder Root register so the accumulated number of cycles will appear in a window above the decade assemblies.

The counter can be actuated by any event that is convertible to an electric impulse rating 4 to 60 volts. A discriminator rejects pulses below the selected level. Counting speed is maximum at 5,000 events per second. The metal housing measures 12 by 8 by 8 inches. The assembly weighs 20 pounds. Operation is on 110-volt 60-cycle ac.

If you write maker identify as **IEN - 5419**

SIGNALING . . Heat detector for prompt temperature alarm actuation

Source: **THOMAS A. EDISON INCORPORATED**
51 Lakeside Ave., Dept. IEN, West Orange, N. J.



Single unit $13.75

Resistance element that senses temperature changes, in this new Model 221 N90A detector, is hermetically sealed in a stainless steel housing. Electrical connections are made through a glass-to-metal header seal. Time constant is 0.8 sec., or better, in an agitated water bath. Useful temperature range is from minus 70 to plus 200 deg. C.

Temperature accuracy is within 1 per cent in the mid-scale region. Basic resistance of the nickel wire sensing element is 90.38 ohms at 0 deg. C. Overall length is 4⅛ inches. Width of the spade type element enclosure is 7/16 inch. Thickness is a little over 1/16 inch.

If you write maker identify as **IEN - 5420**

Rad-Tek is a new portable instrument to measure radiation intensity. It is intended for Civil Defense monitoring teams to determine if it would be safe to enter a devastated area. The instrument is being manufactured for state and local Civil Defense organizations by El-Tronics, Inc., 437 No. 5th St., Dept. IEN, Philadelphia 23, Pa. It operates on flashlight and hearing aid batteries for 100 hr. of continuous operation.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 5421**

How to Cut Cleaning Costs with WASTE RECEPTACLES

IN YOUR PLANT

Everybody is automatically a member of your cleaning department by conveniently placing Bennett Bilt Waste Receptacles to invite their use. These waste receptacles are sanitary, economical and a major help to cleanliness and neatness. Put them to work for you and reduce cleaning costs.

BENNETT
WASTE RECEPTACLES
HAVE ALL THESE FEATURES

- Non-rusting stainless steel feet eliminate rusting and rust marks
- Made of extra heavy-gauge corrosion resistant steel
- All welded construction
- Smooth exterior surface . . . nothing to catch and tear clothes
- Reinforced corners
- Self-closing mechanism assures closed doors when not in use and permits easy opening of independent doors with finger-tip pressure
- Rounded corners for structural strength and pleasing appearance
- Baked enamel finish . . . white or green

• These are a few of the many features that make Bennett Bilt Waste Receptacles a natural "buy".

THE BENNETT MANUFACTURING COMPANY
ALDEN, N. Y.

If you write maker identify as **IEN - 5422**

ITS FELT TIP WRITES ON EVERYTHING!

in BOLD or *fine* lines

Marking steel drums, tools, parts, pipes, etc. is smooth sailing with the Flo-master Felt-Tip Marker.

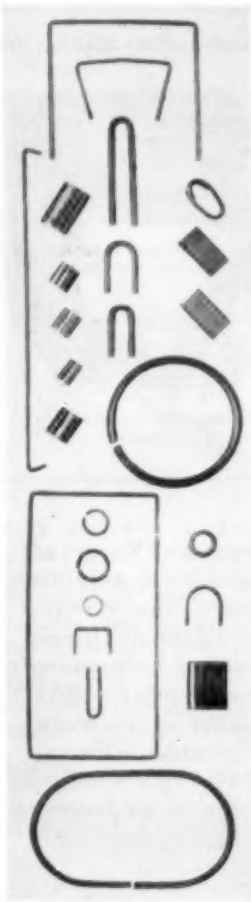
The complete range of ten colors in Flo-master Inks permits speedy and accurate identification for assembling, stocking, inspecting.

Flo-master semi-opaque inks — waterproof, non-smudging, fast-drying — are recommended for hard-to-mark surfaces using the KING SIZE Flo-master. For general purpose marking—cartons, cases, etc—use Transparent Inks with POCKET SIZE Flo-master (illustrated).

Contact your supplier or write direct to Cushman & Denison Manufacturing Co., 153 West 23rd Street, New York 11.

Flo-master
FELT-TIP MARKER

If you write maker identify as **IEN - 5423**



FASTER, MORE ECONOMICAL INDUCTION SOLDERING with SOLDER PREFORMS

precision-made on high speed machines!

Art Wire's high-speed, precision production of pre-shaped forms in hard or soft solders means substantial savings — in initial cost, and on your production line. Precision-made to every specification, including Military and Federal — in shapes to meet the requirements of your induction soldering. Eliminate variability in soldering, insure sounder, stronger joints with Art Wire Solder Preforms.

Write for illustrated folder. Send blueprints or samples for estimate.

ART WIRE & STAMPING CO.
2-G Boyden Place, Newark, N. J.

If you write maker identify as **IEN - 5424**

BJ

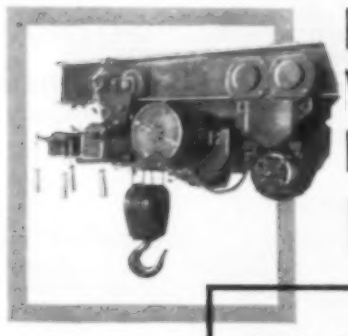
reliable mechanical seals

Your stuffingbox troubles go out when a BJ Mechanical Seal goes in. Sizes to fit any pump.

Contact your nearby BJ Pump sales office or write:

Byron Jackson Co. *Since 1872*
P.O. Box 2017, Terminal Annex
Los Angeles 54, California

If you write maker identify as IEN - 5425



PROFESSIONAL WEIGHT LIFTER ELECTROLIFT

It takes just one man to lift and move those heavy loads around your plant with ElectroLift—the modern, time and man-saving worm drive hoist.

Designed for high-speed operation, ElectroLift hoists are safe, compact, smooth-operating and quiet. Available in sizes up to 6 tons with optional pushbutton control.

For complete details on the features of ElectroLift consult your ElectroLift representative listed in telephone directory or write:

ElectroLift, Inc.
30 Church St., New York 7, N. Y.

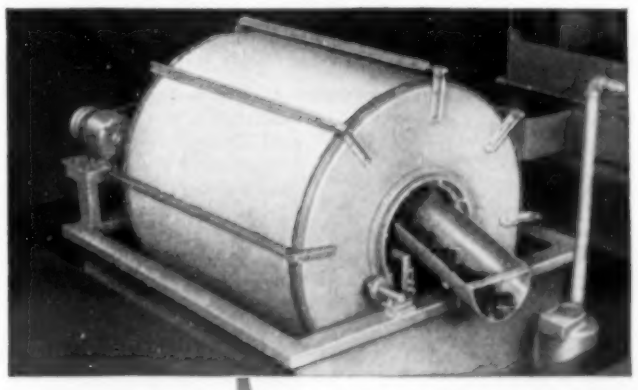
WORM DRIVE ELECTROLIFT HOISTS

2176

If you write maker identify as IEN - 5426

The MURRAY WAY

INDUSTRIAL FILTER



a revolutionary development in solution reclamation that gives you these money-saving features!

- **AUTOMATICALLY OPERATED**
- **SELF-CLEANING**
- **ECONOMICAL**
- **COMPACT**
- **ADAPTABLE**

The Murray-Way Industrial Filter automatically rotates fresh filtering area into position while simultaneously ejecting the contaminant. With this new unit costly consumption of throw-away filtering media is eliminated since the wire filtering screen has many times the life of cloth filtering webs.

The Murray-Way Industrial Filter is a compact unit. It offers unusually great filtering capacity in proportion to area occupied. Amazingly adaptable, the Murray-Way Filter may be used with an individual machine unit or as a central filtering station for many units. Capacity of filtration may be easily increased by adding filters in tandem—separately or in the same tank, to meet requirements. A selection of filtering screen material and size of screen opening can be supplied in monel, stainless steel, brass or bronze to fit your requirements.

For technical details of operation—write for Bulletin F-5301.

other Murray-Way equipment

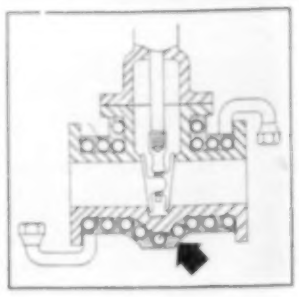
- Micro-Polish Equipment
- Polishing and Buffing Conveyors
- Automatic Dial Tables
- Standard and Special Polishing Heads
- Specially Engineered Automation
- Automatic Loaders and Unloaders

MURRAY WAY CORPORATION
POST OFFICE BOX 180—BIRMINGHAM, MICH
AUTOMATIC POLISHING, BUFFING, GRINDING, FILTERING EQUIPMENT

If you write maker identify as IEN - 5428

HEATING . . Steam jacketing service for pipe lines handling viscous fluids

Source: THERMON MFG. CO.
Box 3027, Dept. IEN, Pasadena, Texas



To order

The company announces availability of a new service in which it is prepared to assemble tubing on valves, pipe fittings and pipe sections, equipment, and to set this tubing in an insulating material known as Thermon. The material is allowed to air dry to a tacky consistency and then is baked, under controlled conditions, to obtain desired thermal and mechanical properties. The completed unit is coated with a special heat resistant finish and is ready for shipment.

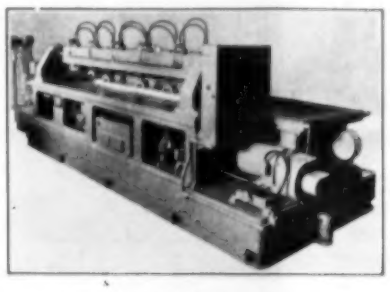
At present the work is being handled in the company's plant. It is planned, in the near future, to provide the services of qualified field personnel to prepare pipe lines and accessory equipment on the job.

The tubing is connected into a steam supply and control circuit so the pipe line is maintained at the required temperature to handle fluids such as molten sulfur, crude bottoms, tars, asphalt. The Thermon material has been tested in service to 500 deg. F. and in alternate hot and cold operation without cracking, spalling or disintegrating. It is resistant to corrosion. List price for preparing a No. 473, 2-in., 125-lb. all-iron flanged Crane gate valve, to handle molten sulfur at 125 deg. C., is about $24 at the company's plant. This does not count the cost of the valve itself.

If you write maker identify as IEN - 5429

SAWING . . Traveling head machine for aluminum plate to 4 in. by 12 ft.

Source: MOTCH & MERRYWEATHER MACHINERY CO.
715 Penton Bldg., Dept. IEN, Cleveland 13, Ohio



Available to order

Non-ferrous plate, such as aluminum, is moved into position on the table of this new Plate Saw over sets of free rollers mounted on small hydraulic cylinders. The rollers hold the plate away from the table, minimize friction and enable an operator to move it back against an adjustable gage. Then the rollers are retracted and adjustable hydraulic clamps are brought down on the work to hold it in place.

A saw head, operating at constant speed, is mounted on a dovetail slide beneath the table so its circular blade projects up through a slot. The head is moved at a variable rate by a motor drive at the right hand end of the table in connection with a feed screw and nut. A retriever handles the power line leading to the head motor.

The machine includes a coolant sump, a chip compartment and chip conveyor, the latter discharging to the left. A motor driven pump and hydraulic tank are centrally located in a recess in the base to operate the rollers and clamps.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5430

CHAINVEYOR

NEW* LOW COST *OVERHEAD CONVEYOR of Revolutionary Design for loads up to 60 lbs. per foot.

Typical Industrial Installation—illustrates flexibility and simplicity of installation. System is 190 feet long with equivalent of 52 vertical and horizontal 45-degree curves. Total weight carried, 5800 lbs. Driven by ½ HP motor at speed of 10 to 30 F.P.M.

We can't adequately describe the advantages of CHAINVEYOR in limited space. Completely enclosed — Simplicity of design — Reduced bulk, weight — 15" radius curves — Full ball bearing chain — Curves, chain scientifically heat-treated to "file hardness" triples life— Simple rugged power drive — So easily installed that most buyers do it themselves for a total cost that is most interesting.

New catalog gives complete information Write for it!

Nationally Distributed by
MATHEWS CONVEYER COMPANY
Ellwood City, Pa.
with offices in all principal cities.

United States Spring & Bumper Co.
4951 Alcoa, Box 2475 Terminal Annex
Los Angeles 58, California

If you write maker identify as IEN - 5431

it's never too early for magnetic protection . . .

PRATER PERMANENT MAGNETS

are recommended for installation — **today** — before uncontrolled tramp iron is allowed to play havoc with your equipment.

PRATER PERMANENT MAGNETS, readily attached to hoppers, spouts or chutes, reach deep into the flow to weed out these destructive metals, increase operating efficiency and safeguard life and property. Each installation is specific as to type, size and arrangement of magnets, as specified by your requirements.

Write for details.

- SINGLE GAP
- DOUBLE GAP
- HEAVY DUTY
- HUMP CHUTE

PRATER PULVERIZER COMPANY
1536 S. 55th Court · Chicago 51, Ill.

PRATER

If you write maker identify as IEN - 5432

NOW BETTER BIGGER SMALL PARTS INSPECTION

A 1001 products from pen points to fine fabrics, dies, casts and molds to intricate surface detail quickly inspected with the

'MICROCARD READER'

EASY TO CARRY— SET UP ANYWHERE

Here's the new, economical method of "pin point" accuracy in inspection of small parts and products. Control your quality by instantly magnifying the smallest part 23 times for accurate, detailed inspection. The Microcard READER is the low cost way to higher quality for you. WRITE TODAY FOR COMPLETE INFORMATION ON "INSPECTION APPLICATIONS" IN YOUR INDUSTRY.

THE MICROCARD CORP.
READER DIVISION

Box 314D
LA CROSSE, WIS.

If you write maker identify as IEN - 5433

GOES TO THE JOB...SAVES ON THE JOB

Light, easy to carry, hang up and use, the knock-about 'Budgit' Aluminum Chain Block puts real economy into spot lifting anywhere and everywhere. The ¼-ton size weighs only 29 lbs. It provides fast, efficient spur-geared hoisting in emergencies or full-time work. A hand chain pull of only 25 lbs. lifts the full load!

No ordinary hacksaw can cut the superhard load chain on the tough 'Budgit' Aluminum Chain Block. The hooks won't fracture when overloaded. The big, fast-acting load brake is fully automatic — makes lowering smooth, safe. Man, load, and hoist are fully protected. Splined fastenings are used throughout to distribute the loading evenly on the shafts. No keys, keyways or pressed fits to cause trouble. You save all around.

Available in ¼, ½, 1 and 2-ton capacities. Ask your "Shaw-Box" Distributor for full details or write for Bulletin 398.

MAXWELL MM MANUFACTURING CO. TRADE MARK

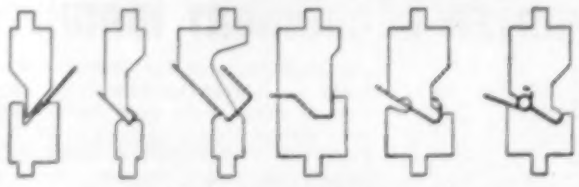
'Budgit'® CHAIN BLOCKS

Builders of "Shaw-Box" and 'Load Lifter' Cranes, 'Budgit' and 'Load Lifter' Hoists and other lifting specialties. Makers of 'Ashcroft' Gauges, 'Hancock' Valves, 'Consolidated' Safety and Relief Valves, 'American' and 'American-Microsen' Industrial Instruments, and Aircraft Products.

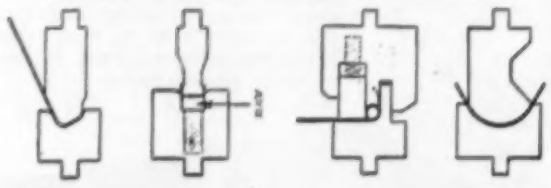
If you write maker identify as IEN - 5434

famous "34 year"

BRAKE DIES



ANY SPECIAL SIZE OR SHAPE CAN BE DEVELOPED BY OUR EXPERIENCED ENGINEERS



Made by the makers of SEMCO PRESS BRAKES (6ft.—8ft.)

Write for new literature showing 26 Standard Brake Die styles and 2 sizes of low priced Press Brakes.

SEMCO

SERVICE MACHINE CO., INC.

200 MILLER STREET • ELIZABETH 4, N. J.

If you write maker identify as IEN - 5435

NEW Ejectopump

COMPRESSED AIR OPERATED

for ABRASIVE and INFLAMMABLE LIQUIDS and SEMISOLIDS

Requires no lubrication

NO GLANDS

NO BEARINGS

NO MOVING PARTS

Now available for the first time in the U. S. Especially suitable for handling latex, bitumen, paint, chocolate, fruits and vegetables suspended in water, pottery slip, carborundum slurries, and various chemicals. Will not cause aeration or coagulation of materials. Available in 1½", 2", 3", 4" and 6" sizes.

Write today for complete details.

FERRO

FERRO CORPORATION

Supplies Division

4180 EAST 56th STREET • CLEVELAND 5, OHIO

If you write maker identify as IEN - 5436

Combines temperature control with a single pole switch. Current is automatically cut off and switch is locked in open position if temperature at any dial setting, through any cause, exceeds temperature range of control by approximately 7% in liquids or 12% in air. Switch remains open until closed by manual reset button. In direct or reverse acting models. Write for Catalog.

Robertshaw-Fulton

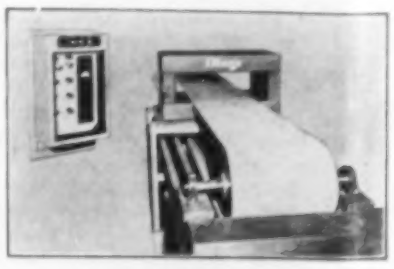
CONTROLS COMPANY

ROBERTSHAW THERMOSTAT DIVISION, Youngwood, Pennsylvania

If you write maker identify as IEN - 5437

TESTING . . Electronic equipment detects metal in non-metallic material

Source: DINGS MAGNETIC SEPARATOR CO.
4740 W. Electric Ave., Dept. IEN, Milwaukee 46, Wis.



Available to order

Foreign metal, ferrous or non-ferrous, in large pieces or minute particles, is detected and its presence is signaled by this new electronic equipment. It is available in a range of signaling and reject designs to warn of the presence of foreign metal or to provide for manual, semi-automatic or automatic rejection. It can be supplied for packaged or bulk materials that travel through the metal-sensitive rectangular housing on a conveyor belt or through a chute. Operation is on 110 or 220-volt single-phase ac.

If you write maker identify as IEN - 5438

FLOORS . . Non-skid material in liquid form to apply like paint

Source: PENNSYLVANIA SALT MFG. CO.
1000 Widener Bldg., Dept. IEN, Philadelphia 7, Pa.

Safe and comfortable

NeoFloor is a new liquid material, supplied as a primer and a final coating, for application with a brush or roller to provide a non-skid floor surface. The material consists of a grit anchored in a matrix of resilient neoprene. The primer acts as an adhesive to bond with the floor. The dry film is resistant to attack by fumes, spilling acids, alkalis, salt solutions, solvents to 220 deg. F. It is waterproof and not subject to attack by oil. It can be cleaned with commercial detergents.

If you write maker identify as IEN - 5439

BASES . . Portable and stationary for machine and equipment assemblies

Source: ELLIOTT MFG. CO.
350 State St., Dept. IEN, Binghamton, N. Y.

Circular 226

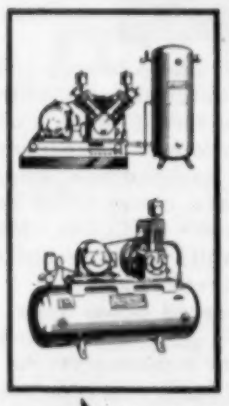
Illustrated are typical units in the company's new line of cast iron and pressed steel bases. The line includes circular base and caster mountings, each with a ball bearing swivel in the supporting column for free rotation through 360 degrees. The legs are made of cast iron or pressed steel in the caster equipped units. Three point support provides for stable action over uneven surfaces. Casters are made of steel with 3 by 1-in. wheels. The base assemblies are available unpainted or with machine gray or other color to meet required specifications.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5440

MORE FREE AIR PER HORSEPOWER

Kellogg-American



AIR COMPRESSOR PUMPS, ½ TO 20 HP

Engineered and precision built to give more *free air* (actual air delivered) per hp, Kellogg-American compressors assure maximum air delivery, efficiency and service life. Single or two stage, 1, 2 or 4-cylinder units available for pressures up to 200 psi; displacements to 105.9 c. f. m.

COMPLETE AIR COMPRESSORS, ½ TO 20 HP

Portable or stationary; skid, remote tank or tank mounted; electric motor or gas-engine-driven models permit you to select the most efficient, economical compressor for every job. Write Dept. I N-2 for Bulletin K-307.

FREE

New slip-stick selector to help determine the right Kellogg-American air compressors for your needs. Send for yours on company letterhead today.

KELLOGG DIVISION
ROCHESTER 9, N. Y.

AMERICAN Brake Shoe COMPANY

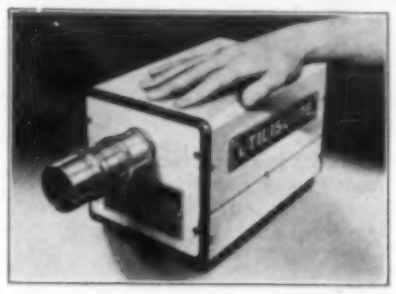
Kellogg-American

½-20 H.P. AIR COMPRESSORS PAINT-SPRAY EQUIPMENT

If you write maker identify as IEN - 5441

SIGNALING . . Television camera reproduces observed remote conditions

Source: DIAMOND POWER SPECIALTY CO.
East Main St., Dept. IEN, Lancaster, Ohio



Bulletin 1136A

Model 300-BV is a new camera featuring small dimensions and high resolution in the company's Utiliscope line of closed circuit industrial television equipment. Trained operators are not required. The new camera can be used in the place of, or interchangeably with, the previously developed Model 300-B. It can be placed in practically any location, remote, dangerous, inaccessible, with one or more viewing screens located for convenient and safe observation.

Typical applications include watching water level and furnace conditions in large power boilers, observing the interiors of steel heating furnaces, viewing dangerous and destructive tests, guarding plant gates, supervising manufacturing operations from a distance, inspecting sensitized film.

If you write maker identify as IEN - 5442

VALVE . . Stainless steel for lines to instruments, 6,000 pounds

Source: MANNING MAXWELL & MOORE INC.
250 E. Main St., Dept. IEN, Stratford, Conn.

Rising stem

Three sizes are ¼, ⅜ and ½ in. in this new stainless steel valve. It has been designed for use on instrument panels in gage and by-pass lines. It permits close alignment of piping with structures. Its packing gland can be pulled tight in close quarters. Disassembly presents no problem.

If you write maker identify as IEN - 5443

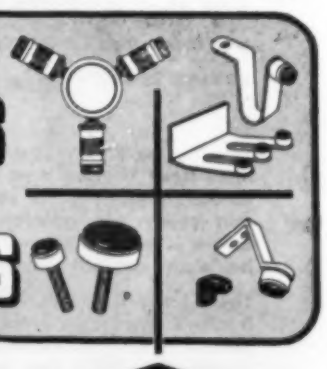
Illustrated is one of two new experimental kits of Thyrite varistors manufactured by General Electric Co., Dept. 6X-201, Schenectady 5, N. Y. The kit shown contains rod type units. The second kit contains a variety of miniature disc varistors. Both kits are available from stock at list prices of $5.25 for the rod type and $3.75 for the disc type. The company has prepared Bulletin GEA-4138C on the subject.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5444

SILVER GRAPHALLOY

BRUSHES AND CONTACTS



. . . for applications requiring low electrical noise, low and constant contact drop, high current density and minimum wear.

GRAPHALLOY

EXTENSIVELY USED IN

SELSYNS • ROTATING THERMOCOUPLE and STRAIN-GAGE CIRCUITS • ROTATING JOINTS GUN-FIRE CONTROLS • DYNAMOTORS etc.

Wide range of grades available for standard and special applications.

Brush holders and coin silver slip rings available for use with Silver Graphalloy Brushes.

Write us for Data Sheets and further information. Outline your problem and we will apply our "40 years' experience" toward its solution.

OTHER GRAPHALLOY PRODUCTS:

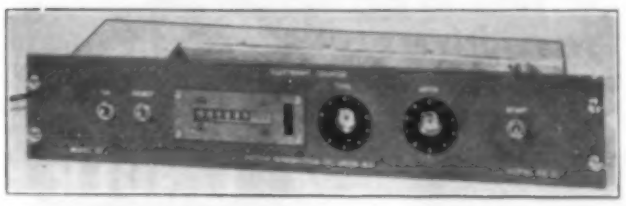
Oil-free, self-lubricating Bushings and Bearings (applicable −100° to +300° F.; with expansion coefficient half that of steel will not seize shaft at low temperature); oil-free Piston Rings, Seal Rings, Thrust and Friction Washers, Pump Vanes.

GRAPHITE METALLIZING CORPORATION
1032 NEPPERHAN AVENUE • YONKERS, NEW YORK

If you write maker identify as IEN - 5445

COUNTING . . Electronic equipment totals pulse signals, to 1,000 cps.

Source: POTTER AERONAUTICAL CO.
Route 22, Dept. IEN, Union, N. J.



Sensitivity 10 mv. to 1 kc.

Two tubes, glow transfer decade design, are employed for the first two digits. A mechanical register totals the next six to provide eight-digit capacity in this new Model-21 electronic totalizer. Pulse or wave signals of 10 millivolts or more can be counted at frequencies to 1,000 cps. Start and stop connections are provided for both remote and local control. An external electric timer can be employed for calibration work requiring precise timing of a counting interval. The assembly is designed to mount in a standard relay rack. It measures 6 in. in depth by 3 in. in height and operates on 110-volt 60-cycle ac. List price is $250.

If you write maker identify as IEN - 5446

STRIPPING . . Paste type solvent removes coated insulations from wire

Source: FIDELITY CHEMICAL PRODUCTS CORP.
470 Frelinghuysen Ave., Dept. IEN, Newark 5, N. J.

Price data upon request

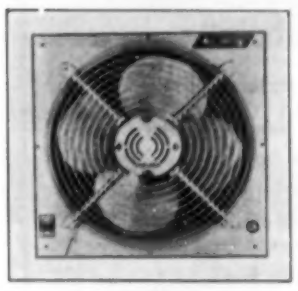
Formex, Formvar and enameled coatings can be removed from electric wire with the new Super X-Var No. 622 free flowing paste type stripper. It is similar to the No. 306 material, previously described IEN-11530-44. It has been strengthened to remove coatings that the other would not loosen.

Wire to be stripped is dipped into the paste for a few seconds. Then it is withdrawn and exposed to the air. It is wiped clean with a cloth when the insulation appears to have disintegrated. No neutralizer is required. The new material supplements, does not replace, the original No. 306.

If you write maker identify as IEN - 5447

VENTILATING . . Exhaust fan, 12, 16, 20 in., 1,000 to 2,600 cfm.

Source: CHELSEA FAN & BLOWER CO.
639 South Ave., Dept. IEN, Plainfield, N. J.



For office use

Type BG designates this new motor driven exhaust fan with its semi-enclosed two-speed motor and rectangular steel mounting panel. The fan is protected inside a guard that forms a part of the assembly. The panel is designed to fit in an opening in a wall. The assembly carries Underwriters' approval. Finish is gray.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5449

GAGE . . Precision block set contains 9 blocks and optical flat

Source: GEORGE SCHERR COMPANY
200 Lafayette St., Dept. IEN, New York 12, N. Y.

To check measuring instruments

Ultra-Chex trade names a new assembly of nine precision blocks, accurate within 0.000005 inch. The smallest measures 0.0625 inch. The largest measures 2.000 inch. The block provides 331 possible combinations, about 0.025 in. apart, for checking and setting micrometers.

The set lists at $27.50 with a 1¼-in. by ½-in. optical flat to check measuring surfaces for flatness and parallelism. List price is $22.50 for the blocks and the case without the flat. Micrometers can be set to the nearest, if not an exact dimension, and any few thousandths of required adjustment, one way or the other, involves negligible error in any dimension not greater than 4 inches.

If you write maker identify as IEN - 5450

GRINDING . . Motor driven machine to sharpen drills and lathe tools

Source: DOALL COMPANY
252-56 N. Laurel Ave., Dept. IEN, Des Plaines, Ill.

For toolrooms

Roughing and finishing wheels are mounted on the two sides of a ¼-hp. ball bearing motor in this new Swanson grinding machine. The roughing wheel is equipped with an adjustable guard and work support. The finishing wheel operates in connection with a bracket supported drill grinding fixture for drills from No. 60 to ¾ inch. Point and clearance angles are adjustable. Average time to sharpen a drill in the size range is about one minute.

The machine is available for bench or cabinet pedestal mounting. A drip type applicator can be added for wet operation. A tool bit fixture also is furnished for small lathe tools.

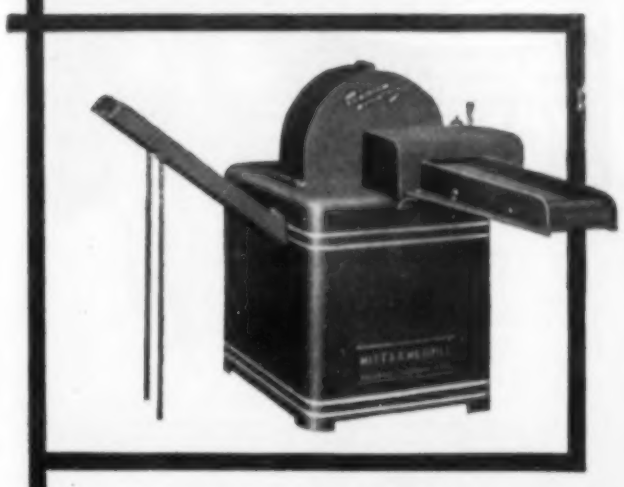
If you write maker identify as IEN - 5451

Replaceable nose prongs are now standard on the Drum-King two-wheel hand truck manufactured by American Pulley Co., 4200 Wissahickon Ave., Dept. IEN, Philadelphia 29, Pa. The prongs bolt in place and can be removed and reassembled quickly. The truck retains its floating axle safety design, which permits storage in an upright or semi-upright position, as well as its self-loading and self-unloading features.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5453

M&M AIR-FLUFF PAPER SHREDDER



The Air-Fluff Paper Shredder is an outstanding machine for use in the commercial manufacture of paper excelsior. Blueprints, letters and confidential records are speedily, safely and efficiently destroyed. Built in 3 sizes ranging in capacity from 200 to 2500 pounds per hour. Each machine can be adjusted to cut widths of ⅛", 3/16", ¼", or ⅜". Write for descriptive literature.

MITTS & MERRILL
1014 South Water • SAGINAW, MICH.
77

If you write maker identify as IEN - 5454

TAPER-LOCK
BUSHINGS WITH WELD-ON HUBS

NOTHING ELSE LIKE IT!

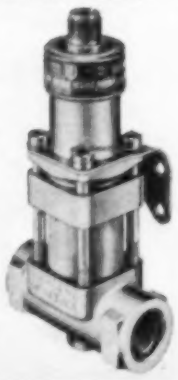
FOR your sprockets, gears, clutches, motors, impellors — for wheels of all kinds where service conditions are *really rugged*—there is nothing like TAPER-LOCK. This famous patented bushing—supplied for your use with matching TAPER-LOCK Weld-on Hub — gives you an easy-mounting, true-running unit that locks to the shaft with firmness equivalent to a shrunk-on fit. *WRITE* for special bulletin A-420A with specifications and entire range of shaft sizes (1/2" to 10").

DODGE MANUFACTURING CORPORATION, 600 Union St., Mishawaka, Ind.

DODGE
of Mishawaka, Ind.

If you write maker identify as IEN - 5448

hi-flow capacity *and* hi-g resistance *in this pilot-operated electro-magnetic* shutoff valve



General Controls AV-9 Series Pilot-operated Electro-magnetic Shutoff Valves feature a pilot-valve construction that reduces current consumption yet provides positive operation for the control of high pressure fluid and gas lines. Available either with metal seat for hydraulic oil and pressurized liquids, or with special synthetic seat for liquids and high-temperature pneumatic applications, these valves combine excellent flow characteristics, positive shutoff, light weight, and low current consumption.

General Controls
AV-9
Electro-magnetic
Shut off valves

GENERAL CONTROLS
Plants in: Glendale, Calif., Burbank, Calif., Skokie, Ill.
Factory Branches in 37 Principal Cities
SEE YOUR CLASSIFIED TELEPHONE DIRECTORY

Manufacturers of Automatic Pressure, Temperature, Level and Flow Controls for Heating, Home Appliances, Refrigeration, Industrial and Aircraft Applications.

If you write maker identify as IEN - 5452

make it STRONGER
do it FASTER
with

Attaching copper lead wires is only one example of the many applications where Raytheon Weldpower Units eliminate slow, less satisfactory methods.

Let us show you how Raytheon Weldpower can improve production of small parts involving assembly of ferrous, non-ferrous or dissimilar metals. Send samples and details . . . or write for complete information. Address Dept. IN-5.

*Reg. U. S. Pat. Off.

RAYTHEON
Excellence in Electronics
RAYTHEON MANUFACTURING COMPANY
Equipment Sales Division, Waltham 54, Mass.
DISTRICT OFFICES: Boston • New York • Cleveland • Chicago • New Orleans • Los Angeles (Wilmington) • San Francisco • Seattle
INTERNATIONAL DIVISION, 19 RECTOR STREET, NEW YORK CITY

If you write maker identify as IEN - 5455

NEWCOMB-DETROIT

PIONEERS IN ENGINEERING, MANUFACTURING & INSTALLING OF

INDUSTRIAL OVENS
•
SPRAY BOOTHS
•
PARTS WASHERS
•
DUST COLLECTORS
•
HEAT and AIR SYSTEMS

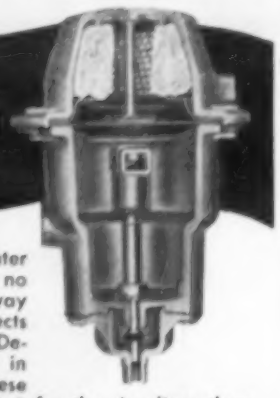
ESTABLISHED 1912
• DETROIT DIVISION
• GRAND RAPIDS DIVISION
• NEWCOMB INDUSTRIES, LTD., WINDSOR DIVISION

For Bulletins and Quotations, Write or Call—
NEWCOMB-DETROIT
5757 Russell St.,
Detroit 11, Mich.
TR 3-2100

If you write maker identify as IEN - 5456

Cure Your Condensation Problems!

NO MORE AIR LINE MAINTENANCE WITH
WILKERSON *Automatic* MOISTURE SEPARATORS



Positive action blasts out water and sludge with practically no pressure drop . . . does away with manual draining, protects your plant equipment. Designed for high efficiency in forcing condensation. These separators are full capacity* for the size lines they serve. Units for every popular line size from 1/4" to 2", low or high pressure. Also for tanks, sumps, compressors, aftercoolers, etc.

There is an efficient Wilkerson automatic model for every set-up. Manual drains also available. Write for literature on your company letterhead.

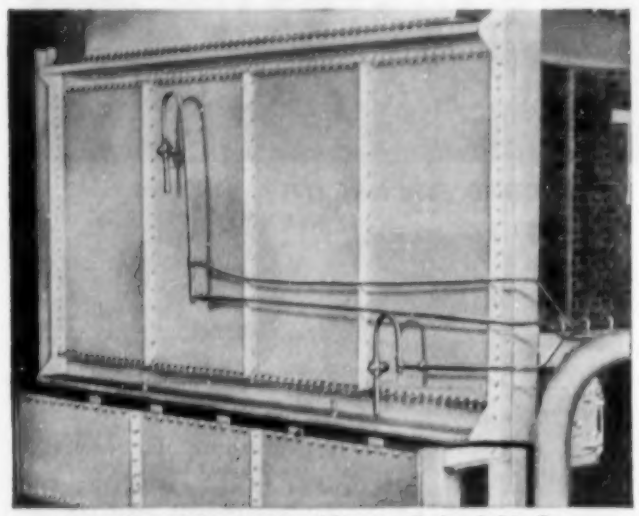
*Separator chamber must be big enough to assist condensation. Volume and shape are important. No ⅜" unit can serve efficiently a ½" line.

Service-distributors in most U.S. cities

WILKERSON CORPORATION

3469 S. PLATTE RIVER DRIVE, ENGLEWOOD, COLO.

If you write maker identify as IEN - 5457



Power House Boiler, Southland Paper Mills, Inc., Lufkin, Texas. Aluminum Paint: High Heat Aluminum, Napko Paint & Varnish, Houston, Texas.

AFTER 36 MONTHS ON THIS BOILER ALUMINUM PAINT SHOWED:

NO DISCOLORATION • NO BLISTERING
NO FLAKING • NO BURNING OFF

Just one coat of aluminum paint! That's all it took to protect this boiler front for 36 months (when photo was taken) and more. Here is a truly remarkable story of aluminum paint's endurance and toughness—after 3 years, no discoloration, no blistering, no flaking or burning off. Remember too, aluminum paint acts as an insulator under these conditions—reduces heat loss, keeps boiler rooms cooler.

Alcoa does not make paint . . . but ALCOA Aluminum Pigments are used in *more* aluminum paints than any other brand. ALCOA's co-operation with paint manufacturers has made possible many special formulas designed to solve your toughest problem. Aluminum paint offers the utmost in brightness and protection.

Maybe you've got a "hot-spot" where both good appearance and protection are desired. Ask your paint dealer about specially formulated aluminum paints—or write us. We'll be glad to recommend a suitable aluminum paint for your job.

FREE booklet, *Painting With Aluminum,* is yours on request. Fill in the handy coupon:

Paint Service Bureau, Aluminum Company of America
1787-E Alcoa Building, Pittsburgh 19, Pa.

Name _____
Company _____
Address _____
City _____ Zone ____ State _____

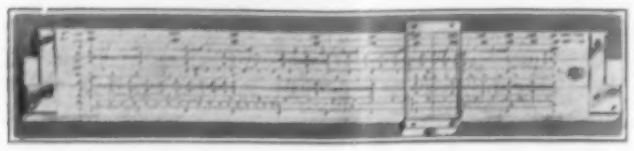
ALCOA ALUMINUM

ALUMINUM COMPANY OF AMERICA

If you write maker identify as IEN - 5459

CALCULATING . . Slide rule for use in general mathematical work

Source: FREDERICK POST COMPANY
3650 N. Avondale Ave., Dept. IEN, Chicago 18, Ill.



Brochure, "Versalog"

Versalog trade names a new 10-in. slide rule in which "root" scales have been added, in combination with the regular C and D scales, for computations involving squares, square roots, kinetic energy, moments of inertia and calculations in which multiplication by the square of a number is required. The trigonometric scales are color coded so the rule user can match colors on the corresponding C, D or C1 scales. A fourth set of LL and LLO scales has been added.

If you write maker identify as IEN - 5460

INSULATING . . Pipe covering for temperature from 30 to 200 deg. F.

Source: ARMSTRONG CORK CO.
1012 State St., Dept. IEN, Lancaster, Pa.

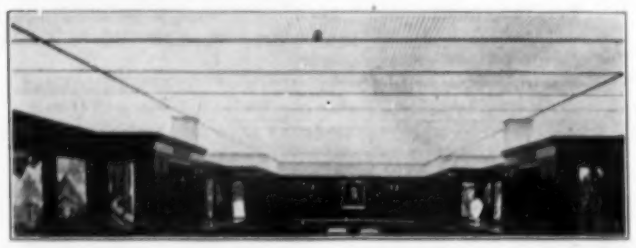
Particularly for indoor use

Corkboard segments are cut to lie longitudinally in a three ply vapor proof paper cover in manufacture of this new Type LT-30 Cork Covering. The segments are adhered to the paper and are shaped sectionally so they will close in against each other to form a ring around the pipe when they are wrapped in place. The overlapping flap of the paper is coated with adhesive and is smoothed down to hold the insulation in place.

Sections measure 36 in. in length. Sizes range from ¼ to 12 in. standard pipe and copper tube. No wires, band or seam filler is required. The company supplies the adhesive and instructions for application. When pipe lines are to be relocated, the paper can be cut and the covering salvaged without damage to the cork. A new strip of the paper and a supply of the adhesive can be employed in new application.

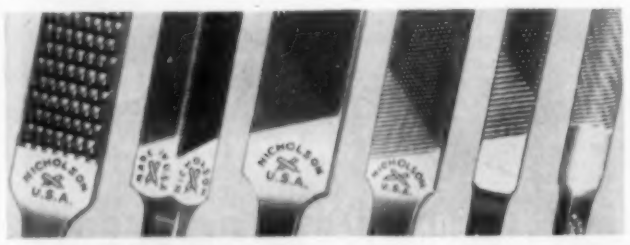
If you write maker identify as IEN - 5461

Corrugated strips, 3 ft. in width and 25 ft. in length, of translucent flexible plastic make up a ceiling that combines



diffused lighting with clean finish as shown in the illustration. Manufacturer of the strip, Luminous Ceilings Inc., 2500 W. North Ave., Dept. IEN, Chicago 47, Ill., is now prepared to supply a washing machine for periodic application. The strips are removed from their channel supports. Then they are rolled up and fed through the washing machine which cleans, dries and treats them for immediate return to service.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50



These fine files typify

QUALITY

that can be easily seen—
readily proved in use—
noticeably shown in longer file life, better work, higher production, lower operating costs

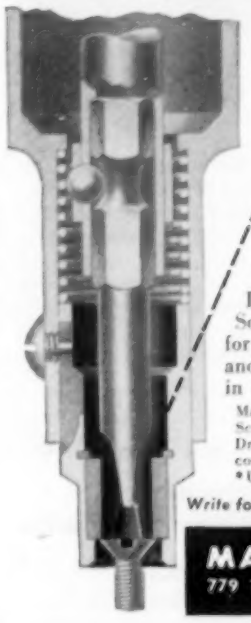
"File Filosophy"—FREE
48 illuminating illustrated pages on kinds, use and care of files. Send for it.

NICHOLSON FILE COMPANY
33 Acorn St., Providence 1, R. I.
(In Canada: Nicholson File Company of Canada Ltd., Port Hope, Ont.)

NICHOLSON FILES
FOR EVERY PURPOSE

If you write maker identify as IEN - 5463

THIS ____ in your power screwdrivers — SPEEDS WORK — CUTS COSTS



The MAGNA FINDER (patent pending)

. . . picks up the screw . . . instantly positions it . . . so that with one-hand operation the bit automatically enters the slot and drives it home. Alnico magnet has ten times the "pull" and holds screw firmly without tilting or shifting.

Interchangeable with regular power Screwdriver finders. Available for all makes of power drivers and all sizes of screws. Thousands in use.

Magna Bit Holders*, Magna-Tip Hand Screw Drivers* and Magna-Tip Hex Drivers also employ the revolutionary, cost-saving Magna principle.
*U. S. Patent No. 2,550,775.

Write for folder 65-E information and prices

MAGNA DRIVER CORP.
779 WASHINGTON ST., BUFFALO 3, N. Y.

If you write maker identify as IEN - 5464

NEW! Volatile Solvent

CARBON MET

A HALOGENATED AROMATIC HYDROCARBON

A specific replacement for toxic Carbon Tetrachloride

U. S. Pat. 2318842

Out and out metal dry cleaning solvent and degreaser in ready-to-use "Handy Kit" containing Patented dip and drier basket.

- **For Liquid Phase Degreasing**
- **Quick Cutting solvent against stubborn dirt and grease.** *Much Faster Cutting than "Carbon Tet" Causes no Rusting . . . Leaves no film*
- **Non-Explosive and relatively non-toxic.**
- **Fast, clean evaporation.** • **Non-Corrosive to metals.**
- **Non-Ionic . . Ideal for degreasing and cleaning electrical parts.** also economical 55 gal. size drum

IMMEDIATE DELIVERY 1 PINT OR A TANK CAR

CURRAN CORP. Mfg. Chemists LAWRENCE, MASS.

120 South Canal St.

If you write maker identify as IEN - 5465

STEVENS WALDEN Inc.
Creators of the Original
SPINTITE WRENCHES
OVER 150 STYLES AND SIZES

Presents THE NEWEST MEMBER OF ITS FAMOUS OLD FAMILY

"GRIP" SPINTITE® THE UNIQUE WRENCHES

for **AUTOMOTIVE • TELEVISION • RADIO INSTRUMENTS • ASSEMBLY WORK**

SIZES 3/16 TO 11/16

ONE HAND OPERATION—
- **GRIPS nuts or bolts of any material**
- **HOLDS firmly in any position**
- **TIGHTENS nut or bolt securely**
- **RELEASES at the pull of the fingers**

MAKERS OF WORLD-FAMOUS HAND TOOLS FOR OVER 50 YEARS

STRONG PLASTIC HANDLE • FINEST QUALITY STEEL SHANK AND SLEEVE • BRIGHT PLATED FINISH
SPECIAL SIZES AND MATERIALS TO ORDER

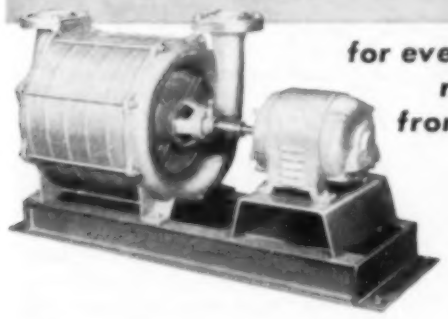
Write for catalogue

102-4

STEVENS WALDEN Inc.
466 SHREWSBURY STREET — WORCESTER, MASSACHUSETTS

If you write maker identify as IEN - 5466

LAMSON BILLMYRE BLOWERS & EXHAUSTERS



for every pressure requirement from ½ to 7 lb. ...single or multi-stage design

Cast iron or fabricated steel, for air or gas—agitating, aerating, combustion, cooling, ventilating, gas and acid manufacture. Guaranteed consistently even pressure without contamination. Low maintenance cost, as shaft-impeller assembly is only moving part—eliminates constant checking.

Get *ALL* the facts...a complete information file—engineering laws, tables, features, applications, and lots more...all in Lamson Billmyre Blower and Exhauster Catalog B-6...*YOURS* for the asking!

LAMSON

LAMSON CORPORATION
2105 Lamson St., Syracuse 1, N.Y.

Plants at Syracuse and San Francisco

If you write maker identify as IEN - 5467

If your answer is National Vulcanized Fibre—you're acquainted with perhaps the most remarkable of all materials. If you didn't know the answer—then you'll be pleasantly surprised to find out about this material of a million uses. Its unusual properties might be exactly what you're looking for!

what

National Vulcanized Fibre is half the weight of aluminum. For many mechanical purposes it's better and more durable than metal. Strong and resilient . . . it insulates, wears stubbornly, resists shock and abrasion. It can be machined, bent, formed, drawn, swaged. It has high dielectric strength, which adds to its versatility.

material

is "light as

a feather"...

No other material possesses *all* the mechanical and electrical characteristics found in National Vulcanized Fibre! This material has been proved best for at least one of the parts in almost every electrical appliance and installation. It has countless mechanical applications, too. Almost every industry uses National Vulcanized Fibre. And new uses are constantly being discovered.

tough

like iron?

What about you? Need more specific information—help—or a catalog? Just write to address below, Dept. G-5.

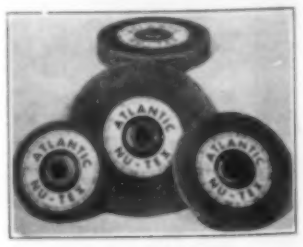
• *National also manufactures Phenolite Laminated Plastic, Peerless Insulation, Vul-Cot Waste Baskets, and Materials Handling Equipment*

NATIONAL
VULCANIZED FIBRE CO.
WILMINGTON 99, DELAWARE
FIRST—IN MAKING THE MOST OF LAMINATED PLASTICS

If you write maker identify as IEN - 5469

GRINDING . . Disc wheels for cutting, slotting, weld removal

Source: ATLANTIC ABRASIVE CORP.
502 Pearl St., Dept. IEN, South Braintree 85, Mass.



Non-clogging

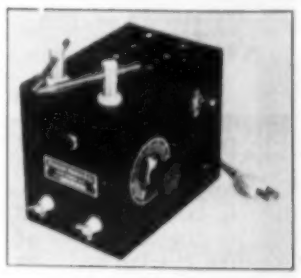
Textile reinforcing characterizes the construction of this new line of Nu-Tex grinding wheels. They are designed with straight walls or depressed centers for use on portable and bench type grinding machines. They provide resilient cushioned cutting action. The tough resinoid bond reinforces the textile against breakage.

Depressed center wheels are available in 7 and 9-in. diameters and from ⅛ to ⅜ in. in thickness. Straight wheels range from ½ to 10 in. in diameter with thickness at $\frac{1}{16}$ to ½ inch. Grades range from No. 0 hard to No. 6 soft. A range of grit sizes available to meet user requirements.

If you write maker identify as IEN - 5470

SOLDERING . . Carbon electrode unit heats on work contact to close circuit

Source: VEMALINE PRODUCTS CO.
Box 222, Dept. IEN, Hawthorne, N. J.



For small work

Model J5 is a new assembly of the company's 450-watt 110-volt ac. transformer type soldering unit in which the work is brought to carbon electrodes secured in posts on the housing top. The unit is suited for production soldering of contacts, pigtails, receptacles, connectors, terminals, contact springs, lugs, wire harness, instrument parts. Operating temperature is to 1,600 deg. F.

If you write maker identify as IEN - 5471

MIXING . . Colloidal mill employs knives in shearing action

Source: CAZENOVIA PRECISION MACHINE CO.
667 Oakwood Ave., Dept. IEN, East Aurora, N. Y.

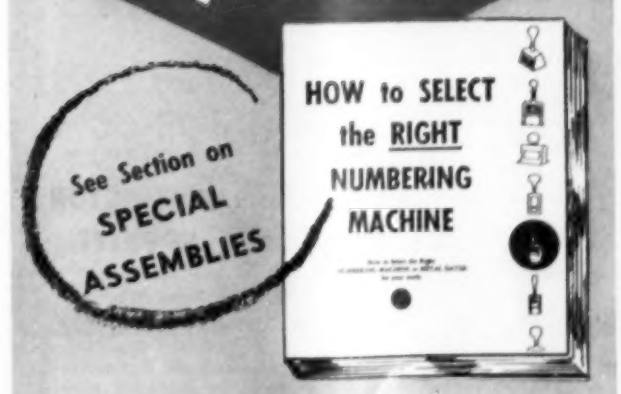
For emulsions

Disc Disperser is a new motor driven colloidal mill. Shear knives are driven at high speed between perforated plates through which material is fed. The knives will cut long fibers and stabilize materials such as grease without overworking it. No cooling provision is required due to the negligible amount of heat generated. The mill is driven by a 15-hp., 1,800-rpm. motor. It measures 53 by 13 by 21 in. in overall dimensions.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5472

Need Something Special ?



Besides complete coverage on standard Hand Numbering Machines and Metal Daters, this convenient reference book gives you full information on Special Assemblies — what's available and how to order. Over 40 pages of other valuable material and 40 photos.

Write for your free copy today.

WM. A. FORCE & COMPANY, INCORPORATED
216 NICHOLS AVENUE, BROOKLYN 8, N. Y.

If you write maker identify as IEN - 5473

BARBER COLMAN

Barcol.

OVERdoor

standard sizes up to 28′ 2″ wide; 21′ 6″ high

High, wide, and handsome . . . big Barcol OVERdoors operate smoothly and easily. Twin torsion coil springs balance the exact weight of each door down to the last ounce of hardware, glass and paint! Patented cam closing makes door weather-tight yet easy working. Manual or electric operation with radio control if desired. Only Barber-Colman manufactures doors, operators and radio controls. Look for your distributor under "Doors" in phone book.

BARBER-COLMAN COMPANY, DEPT. V45, ROCKFORD, ILLINOIS

If you write maker identify as IEN - 5474

ACCURATE PAIR FOR AIR

MASONEILAN AIR Reducing Valve and Filter

This sturdy combination provides clean air at accurate reduced pressures for a multitude of uses. Compact. Easy to install. Has large capacity . . . instant response. Extra-sturdy construction reduces maintenance to a minimum.
Initial pressures up to 250 lbs. Reduced pressure: 5-60 lbs., 60-100 lbs. Sizes ¼″ to ½″. Sold separately or in combination. Pressure gauge included.

Call your local Mason-Neilan Industrial Distributor for fast, dependable service.

MASON-NEILAN REGULATOR CO.
1188 ADAMS STREET, BOSTON 24, MASS., U. S. A.

If you write maker identify as IEN - 5475

THIS... PLUS THIS *non-slip flooring low budget price*

ADDS UP TO THIS

Pattern ½ actual size

A.W. SUPER-DIAMOND

When you want real foot safety at an economical price, install *A. W. Super-Diamond.* No other flooring offers such safety, easy maintenance and durability at so low a cost.

Super-Diamond's exclusive engineered raised-diamond pattern puts 40 anti-skid traction points in every footstep.

Super-Diamond takes hard blows and heavy loads—resists fire, heat and most chemicals. And it cuts maintenance costs because it's so easy to clean with hose, mop or broom—has no cracks or corners to collect dirt. Send coupon today for a free copy of our newest booklet on foot safety *and* economy with *Super-Diamond.*

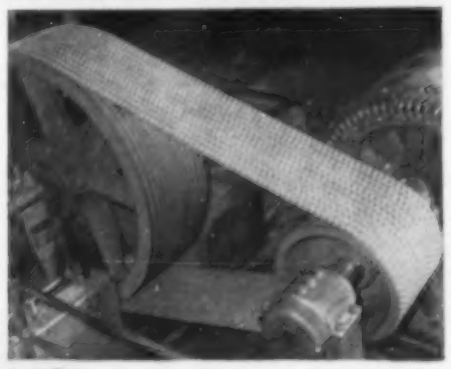
A.W. SUPER-DIAMOND
ROLLED STEEL FLOOR PLATE

ALAN WOOD STEEL COMPANY
CONSHOHOCKEN, PA.

Please send your new, free booklet SD-3 on Super-Diamond for safety.

Name _____
Company _____
Address _____
City _____ Zone _____ State _____

If you write maker identify as IEN - 5476



New VEELOS TD and TE adjustable v-belt for D and E drives

- *easy to couple and install*
- *does a better job for a longer time*

Faster and easier to install. Cup-washers and T-screws join links together to make up individual belts—and you don't need to remove outboard bearings to get the belts in place.

Lasts longer. Advanced construction of stud, cup-washer and T-screw provides added strength and durability—protects the new high-tensile strength link.

Perfectly balanced. Machine-cut sides and uniform links provide smooth, vibrationless, full-power delivery.

Get the complete story of this great, new Veelos TD and TE v-belt. Send for new 8-page illustrated bulletin.

VEELOS THE LINK V-BELT

MANHEIM MANUFACTURING & BELTING CO.
651 Manbel St., Manheim, Pa.

Adjustable to Any Length • Adaptable to Any Drive

If you write maker identify as IEN - 5477

ACCURATE TACHOMETER and Vibration Indicator

Check vibration and R.P.M. on:

Reveals vibration where undesirable, shows dead spots where vibration is needed.

VIBRA-TAK in Leather Pocket Carrying Case

A valuable tool you will want to carry with you. Easy to operate by moving tuning slide to get accurate scale reading of vibration cycles per minute or shaft speed in R.P.M. The Vibra-Tak has a range of 2,000 to 15,000 C.P.M. Just place bullet nose against vibrating object, adjust tuning slide to point where wire reed reaches maximum "throw" and read the accurate scale.

ONLY $5.00

Just the price of a fountain pen. Leather pocket carrying case. Print name and address clearly and enclose check or money order. Your Vibra-Tak quickly shipped prepaid.

MARTIN ENGINEERING COMPANY
Kewanee 2, Illinois

If you write maker identify as IEN - 5478

Reach hard-to-get-at screws with

"YANKEE"

OFFSET RATCHET SCREWDRIVER

No. 3400

Fits in vest pocket—yet has the power of a full 8-inch screwdriver. Needs only an inch or so of clearance. Two sizes to drive slotted head screws. Wherever good tools are sold—or write for full particulars. "Yankee" Tools, 204 West Lehigh Avenue, Philadelphia 33, Pa.

No. 3600-9

HANDY PLASTIC KIT

for mechanics who need ratchet screwdriver to fit hollow head screws. Features No. 3600 handle with 8 hex key adapters ranging from 5/64" to 5/16".

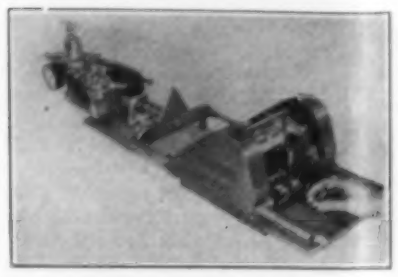
STANLEY ®

"YANKEE" TOOLS
A Division of The Stanley Works

If you write maker identify as IEN - 5479

MARKING . . Color machine to apply ink, enamel, varnish imprints

Source: ACROMARK COMPANY
7 Morrell St., Dept. IEN, Elizabeth, N. J.



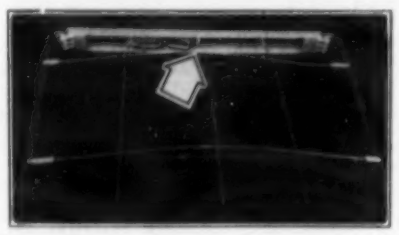
Ask for work sample

Pneumatic operation is now a part of the standard assembly of the company's No. 507 color filling and printing machine for application on small work pieces made of metal, plastics. The machine applies color to depressed or sunken designs and lettering. It will print on name plates, ornaments, emblems, novelties, machine parts of metal or plastic at speeds ranging from 15 to 120 per minute. The machine connects to a shop air line supplying 75 lb. or more. Correct inks can be supplied in desired colors for any specified material. Overall dimensions are about 30 by 12 by 8 inches.

If you write maker identify as IEN - 5480

TRUCKS . . Split header bar for use on open top vehicle trailers

Source: AERO CANVAS PRODUCTS INC.
618 W. Merrill St., Dept. IEN, Indianapolis 25, Ind.



Eliminates mis-alignment

New bar has been developed for application at the top rear of vehicle trailers with open tops. It is made in two parts, hinged to the two sides of the trailer body, as shown. The parts are connected by a toggle clamp which locks in place to make, in effect, a single rigid unit.

Reinforced top bows and tarpaulin supporting cables complete the top assembly for a trailer to take a standard tarpaulin and hold it so it will not form hollows to collect water that might result in damage to a cargo.. The complete assembly can be removed in about 5 min. for loading and unloading.

If you write maker identify as IEN - 5481

Reach way up to 16½ ft. above the floor line with the new triple telescopic mast now available from Automatic Transportation Co., 149 West 87th St., Dept. IEN, Chicago 20, Ill. The mast comes down to an overall height of 7 ft. in lowered position. It is available for the company's trucks rating 1 to 5 ton. Triple extension is shown to the left in the illustration in place on a truck.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5482

HOW to remove FLOOR STAINS

Free HUNTINGTON BOOKLET

Here's a booklet that tells you how to remove stains from every type of floor! Results are better and it's easier when you follow the proved methods in Huntington's new booklet, "How to Remove Floor Stains." Write today, on your company letterhead, for your free copy.

HUNTINGTON LABORATORIES, INC.
Huntington, Indiana • Philadelphia • Toronto

If you write maker identify as IEN - 5483

Robbins & Myers J Hoist

check

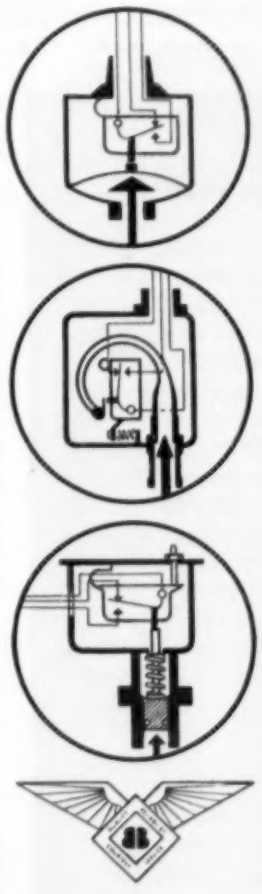
THE J-HOIST POINT BY POINT

See why it is today's biggest hoist value. Special R & M high-torque hoist motor — One piece cast aluminum alloy frame with oil and dust-tight covers — Heat treated gears and precision ground steel shafts running in sealed ball bearings — Plow steel cable — Rugged limit switch — Safety hook block — Forged steel hook — Capacities 500 to 4,000 lbs. — Speeds 15 to 30 f.p.m. — Lift 10 to 20 ft. — Mounting choice of lug, hook, or plain trolley — And *J* hoist prices start at only $268! For complete details and address of your nearby distributor, write for Bulletin No. 851-A. Please mention: INDUSTRIAL EQUIPMENT NEWS

take it up with

ROBBINS & MYERS, INC.
SPRINGFIELD, OHIO | BRANTFORD, ONTARIO

If you write maker identify as IEN - 5484



HOW TO SELECT THE CORRECT PRESSURE SWITCH FOR YOUR APPLICATION

This handy guide clarifies the seemingly complex problem of pressure switch selection, by narrowing the choice down through four consecutive steps. The first step determines the degree of sensitivity, with listings of typical applications. Next the required proof pressure limit. Third the function of the switch, such as single, dual, or pressure difference control. And fourth the desired detail features, like, explosion proof, housed, stripped, etc. This method leads you to specific standard models, tailored to your application, and, you don't have to be an expert to find the correct answer. Write for bulletin M-3.

BARKSDALE VALVES

5125 ALCOA AVE., LOS ANGELES 58, CAL.

If you write maker identify as IEN - 5485

CAPACITY + PRECISION + ECONOMY +

Model 55 Vertical Mill

Choose **INDEX MILLS** FOR THESE (+) PLUS ADVANTAGES

You get more when you buy an Index Mill—more quality, superior features. You are not just buying a machine . . . You are investing in equipment that will deliver better results at lower cost. The ideal machines for all your

MILLING, BORING and DRILLING JOBS

Outstanding in this great line is this versatile MODEL 55 VERTICAL MILL, designed for those extra capacity jobs often found in tool and die shops; provides increased speed and feed range. Capacity ⅛" to 1½" end mills in steel, a table working surface of 32" x 9" or 38" x 9"; overall 40" x 9" or 46" x 9"

INDEX BUILDS BETTER MILLS . . . WRITE FOR LITERATURE

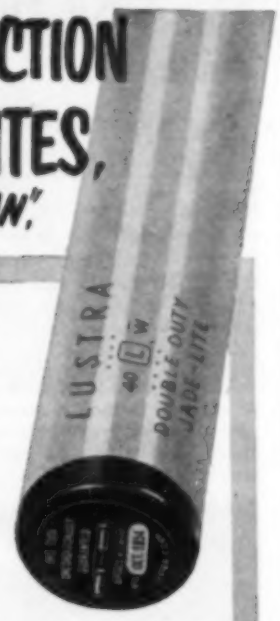
INDEX MACHINE CO.
545 N. MECHANIC STREET JACKSON, MICHIGAN

If you write maker identify as IEN - 5486

"FASTER PRODUCTION WITH JADE-LITES,

thanks to the ***LUSTRA MAN,"***

says The Philadelphia Thermometer Co.



Mr. L. W. Scanlan, General Mgr., reports: "Ordinary fluorescents in our production department caused annoying glare. Our local Lustra Man suggested Lustra Jade-Lite Fluorescents which eliminated both glare and eyestrain and speeded production importantly."

Your local Lustra Man can solve your lighting problems, too...and save you money at the same time. Write for literature giving the whole Lustra story. **Lustra Corporation, Dept. P-5, 36 Washington St., Brooklyn 1, N. Y.**

Lustra
AMERICA'S DATED LAMPS

DOUBLE DUTY REFLECTOR LAMPS, INCANDESCENT LAMPS, FLUORESCENT TUBES, SPOTLITES AND FLOODLITES, RUGGED DUTY LAMPS, FLUORESCENT FIXTURES AND STARTERS

If you write maker identify as IEN - 5487

to WELD or CUT ... there is a *Dockson* outfit "complete" at one low price

FOR EXAMPLE—The Dockson No. 145 Outfit illustrated right is for light and medium welding and cutting jobs up to and including 5" steel. At one low price you get—

- ★ 1—No. 4-E-C Hi-Speed Welding Torch.
- ★ 1—Ea. Nos. 2, 4, 6, 8, and 10 "E" Style Elbow Tips.
- ★ 1—C-4 Hi-Speed Cutting Attachment.
- ★ 1—C-2 Cutting Tip.
- ★ 1—No. 134-BE Oxygen Regulator, 200 lb. and 3000 lb. gauges.
- ★ 1—No. 134-AD Acetylene Regulator, 50 lb. and 500 lb. gauges.
- ★ 1—Commercial to P. O. L. Adaptor.
- ★ 1—12½ ft. length ¼" Siamese Hose.
- ★ 4—Hose Connections.
- ★ 1—Outfit Wrench.
- ★ Round File Gas Lighter.
- ★ 1—Pr. Series 66-19-6 Welding Goggles.

YOUR DOCKSON DISTRIBUTOR—is a carefully selected specialist who carries a complete line of Dockson Products in stock to give you fast service and personal attention. We back our distributors 100%.

Built for Better Service

Dockson CORPORATION

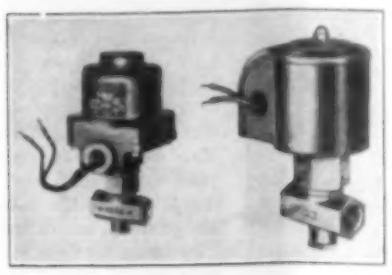
WRITE FOR YOUR DISTRIBUTOR'S NAME AND OUR COMPLETE CATALOG OF HEAD AND EYE SAFETY EQUIPMENT.

3839 Wabash Ave. • Detroit 8, Michigan

If you write maker identify as IEN - 5489

VALVES . . Solenoid operated for steam, corrosive gases, liquids

Source: AUTOMATIC SWITCH CO.
391 Lakeside Ave., Dept. IEN, Orange, N. J.



Bulletins 8268, 8269

Special 8268 and Special 8269 are new designs to complement the company's standard two-way bronze and brass body solenoid operated valves of the same numbers. The new units are fitted with stainless steel bodies or steel with stainless steel trim. Special 8269 has an explosion-proof solenoid for Class I Group D hazardous locations. Both valves are suitable for temperatures to 450 deg. F. and are available in ⅜ and ½-in. pipe connection sizes. Orifice diameters range from ⅛ to ⅜ inch. Manual operators can be supplied on all sizes except those with the ⅛-in. orifice.

Construction provides for disassembly to sterilize or clean. Operation is characterized by impact closing and opening. Tight seating and positive closing are assured by the combination of impact, gravity and the force of the closing spring. Opening results from the impact of a shoulder on the core interior with a shoulder on the top of the stem. This action adds to the pull of the solenoid itself. Both valves are designed for normally closed operation, but normally open valves can be specified.

Class A coils are supplied with steel body and stainless steel trim valves for temperatures to 212 deg. F. Class H coils are employed for higher pressures and temperatures. They are standard in all of the stainless steel valves.

If you write maker identify as IEN - 5490

CONSTRUCTION . . Concrete float with rotating and compacting actions

Source: WEISNER-RAPP COMPANY
1600 Seneca St., Dept. IEN, Buffalo 10, N. Y.

Power Compactor

The rotating action of the heavy float disc in this new Kelley machine is combined with impact provided by four steel hammers pivoted on shafts and attached to the body of the machine. The hammer heads ride on a cam track on the balanced float disc so they are alternately raised and dropped as the disc rotates. The resulting impact action on the disc compacts, densifies and floats a concrete slab to a smooth level surface as the operator is doing in the illustration.

The machine is driven by a gasoline engine. It is controlled at the steering handle. It is suited for use on harsh nearly dry concrete mixes and also on asphalt mastics.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5491

NEW Electro PROXIMITY PICK-UP SYSTEM

Proximity Actuated Transducer produces constant electrical output independent of speed or motion

MODEL 4900

No mechanical contact with exciting metal

It consists of Model 4910 Proximity Pick-Up transducer, cable and Model 4901 control unit. Produces DC voltage of constant amplitude when any metallic mass is near the pick-up. Output voltage remains constant while exciting metal is close to pick-up and drops to zero when removed. *Rise and delay time of voltage is extremely fast producing a definite snap action.*

Actuates electronic or electromechanical devices for:

- Counting parts.
- Indicating position.
- Indicating distance traveled.
- Detecting presence of metal.
- Indicating rate of travel.
- Sequence timing devices.
- Operating from 0 to over 12,000 times a minute.

FREE BULLETIN

Write now for engineering information and specifications!

ELECTRO PRODUCTS LABORATORIES
4501-1Ex N. Ravenswood Ave., Chicago 40, Ill.
Canada: Atlas Radio Corp., Ltd., Toronto

If you write maker identify as IEN - 5492

QUESTIONS on plastic sheet? Kodak has ANSWERS!

REVISED EDITION!

FACTS ABOUT KODAK'S FAMOUS CELLULOSIC SHEET

Write for your copy today

IF you use, plan to use, or merely want to know more about plastic sheet, this data book belongs first on your desk, then in your files for reference.

Facts and figures about Kodapak Sheet—cellulose acetate, cellulose acetate butyrate, and cellulose triacetate. Includes full information on types, gauges, colors, finishes, and general properties—moisture, permanence, mechanical, optical, thermal, chemical, and electrical—all presented in easy-to-read form.

"Properties of Kodapak Sheet" is a helpful aid for engineers, designers, manufacturers, and converters.

Makes Good Products Better

Kodapak Sheet
"Kodapak" is a trade-mark.

A PRODUCT OF EASTMAN KODAK COMPANY, ROCHESTER 4, N. Y.

If you write maker identify as IEN - 5493

Reclaiming Materials

If your cost of reclaiming materials is too high Spencer Vacuum can probably give you the answer. It not only picks up the valuable metals or dusts but conveys them to a closed container at any point in the plant. Gold, babbitt, enamel dusts, solder, welding flux (see illustration) and foundry sand are reclaimed by the ton every day. The same Spencer unit will clean your floors and do a dozen other disagreeable and expensive jobs. Ask for Bulletin No. 144.

with SPENCER VACUUM

THE SPENCER TURBINE COMPANY • HARTFORD 6, CONNECTICUT
SPENCER HARTFORD

466-N

If you write maker identify as IEN - 5494

small but MIGHTY!

Fastenings are small, but mighty important to the life of your equipment—especially when there's a corrosion problem. Prevent this danger—use Harper Everlasting Fastenings. In stock are over 7,000 different types and sizes to meet all requirements. Call your Harper Branch Office or Distributor. Write for information.

Specialists In All Corrosion-Resistant Fastenings

BOLTS, NUTS, SCREWS, RIVETS, WASHERS of BRASS, BRONZE, MONEL, ALUMINUM, STAINLESS

HARPER

The H. M. Harper Company
8211 Lehigh Avenue
Morton Grove, Illinois
Please send me Harper Catalog 25.

Name.....
Company.....
Address.....
City.....Zone....State.....

If you write maker identify as **IEN - 5495**

HOW YOU CAN *hear better* TO TELEPHONE

Loudness of Noise Reduced 50%* Inside a

BURGESS-MANNING

Acousti-Booth

- Thick walls of sound absorbing material, patented design, and craftsmanlike construction reduce the loudness of noise by 50%*... leaving a zone of quiet for ease of telephoning.
- Doorless construction makes for a light, airy, well ventilated booth ... easy to keep clean ... low maintenance.
- Easy to move ... Suited to any noisy location ... Wall and floor models ... Handsome in appearance.

Write for Bulletin A-124

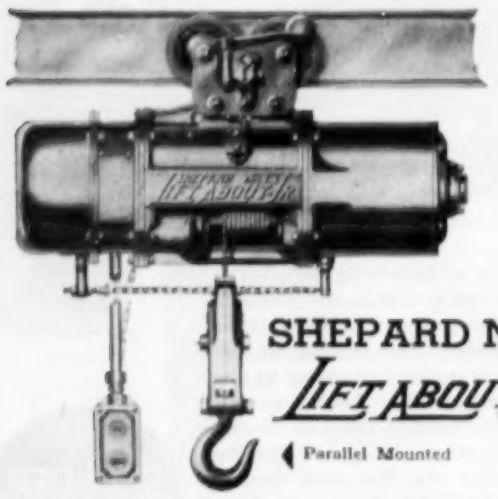
Model 211 Floor Model

** Based on studies by a prominent research organization.*

BURGESS-MANNING COMPANY
Architectural Products Division
5970-A Northwest Highway, Chicago 31, Illinois

If you write maker identify as **IEN - 5496**

Hook your load to a SHEPARD NILES

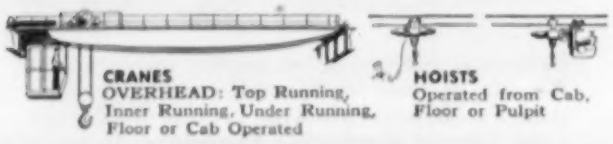


SHEPARD NILES
LIFT ABOUT-JR.

Parallel Mounted

- Lighten your work with a Lift About-Jr.! It's the perfect hoist for a hundred-and-one lifting jobs in your plant.
- This Shepard Niles Hoist is the toughest light-service hoist on the market, offers you years of dependable lifting. Available in 250, 500, 1000 or 2000 lb. capacities, it features trouble-free wire rope hoisting . . . can be obtained with either rope or push-button operation. The Lift About-Jr. is offered parallel or cross-mounted with bolt, hook or trolley suspension.
- Ask the Shepard Niles representative to tell you about the Lift About-Jr. line. He'll help you select a hoist with the right capacity and controls for your job.

Cross Mounted
LIFT ABOUT-JR.



CRANES
OVERHEAD: Top Running, Inner Running, Under Running, Floor or Cab Operated

HOISTS
Operated from Cab, Floor or Pulpit

SHEPARD NILES
CRANE AND HOIST CORPORATION

SHEPARD NILES Crane and Hoist Corp.
1051 Schuyler Ave., Montour Falls, N.Y.

( ) Please send me your new Lift About-Jr. Bulletin.
( ) Please have a representative call.

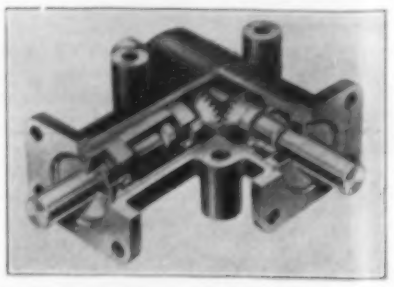
MAIL COUPON!

NAME _____ TITLE _____
COMPANY _____
STREET _____
CITY _____ STATE _____

If you write maker identify as **IEN - 5498**

DRIVE . . Geared head for angle drive on one-to-one ratio

Source: AIRBORNE ACCESSORIES CORP.
25 Montgomery St., Dept. IEN, Hillside 5, N. J.



Available from stock

Coniflex bevel gears replace the straight tooth gears in assembly of the Anglgear drive, previously described IEN-11323-50. The new gears prevent outer end loading, minimize the danger of tooth breakage. The assembly is available in ⅛ and 1-hp. ratings for operating speed at 1,800 rpm.

The larger unit measures 6 by 5 by 2 in. and is rated at 1,500 in. lb. ultimate static torque capacity. It employs ⅝-in. shafts. The smaller, ½-hp. unit, measures 3⅞ by 3½ by 1¼ inches. It rates 250 in. lb. in standard construction. Special gears can be supplied for 500 in. lb. rating. Shaft diameter is ⅜ inch. Both assemblies are mounted on ball bearings and include end seals to prevent escape of lubricant or entrance of foreign matter. List prices are $19.50 and $39.75.

If you write maker identify as **IEN - 5499**

CLEANING . . Sweeping machine, engine drive, vacuum dust collector

Source: PARKER SWEEPER CO.
100 Bechtel Ave., Dept. IEN, Springfield 99, Ohio

30,000 sq. ft. per hour

New assembly of the company's engine-driven floor sweeping machine employs a Turbo-Sweep blower to pick up dust from the air at the rate of 300 cfm. while the machine's fiber brush is throwing debris into the collecting hopper. Removal and emptying require about 10 seconds. The dust collecting bag holds 1.6 cubic feet. It requires emptying at infrequent intervals.

Centralized controls include the throttle, hopper, brush height and clutch controls. Drive is by a 2-hp. Briggs & Stratton gasoline engine equipped with a Maxim silencer. Sweeping width is 28 inches. Casters at the front and rear assist in guiding the machine in obstructed areas. The main rubber tired wheels are mounted on ball bearings. The frame is tubular and structural steel.

If you write maker identify as **IEN - 5500**

Single carbide pieces, weighing as much as 2 ton, can now be produced by Carboloy Dept., 11167 E. 8-Mile Road, Dept. IEN, Detroit 32, Mich., for such purposes as large die sections, rolls for steel strip, large punches for cold extruding, large wear resistant lining for brick molds. A 200-ton hot press, recently installed in the company's Detroit plant, is employed in making the carbide pieces. The press uses graphite extruded stock measuring 36 in. in diameter. The company invites your blueprints or sketches for cost estimates.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 5501**

Hundreds of machines available that were designed for special industry applications.

Let us know your problem. We'll be happy to submit recommendation.

If your problem is high speed coating of paint, varnish, glue, latex, etc. — POTDEVIN'S sixty years of specialization in coating equipment can quickly help you solve it.

Illustrated is a special machine to uniformly paint wood up to 2 inches thick and 30 inches wide.

ESTABLISHED IN 1893 — POTDEVIN

POTDEVIN MACHINE CO.
213 North Street • Teterboro, N. J.

Designers and manufacturers of equipment for Bag Making, Printing, Coating, Laminating, Gluing and Labeling.

If you write maker identify as **IEN - 5502**

END SASH LIGHT REPLACEMENT!

Shatterproof—Crackproof Panes of Flat RESOLITE Last Indefinitely

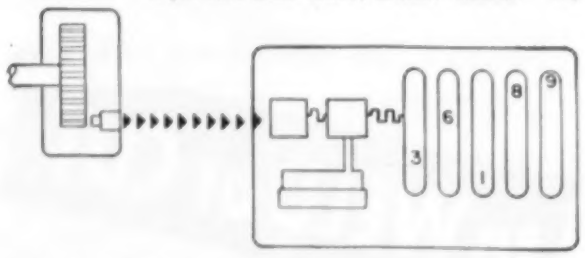
You can install window and door lights that won't shatter when hit by flying objects; that won't crack when subjected to severe vibration, concussion or intermittant radiant heat. Translucent Resolite — a glass-fiber reinforced polyester resin—is also unaffected by weather extremes of heat, cold or moisture, and by usual industrial fumes.

That's why more and more modern plants are using Resolite for all glazing, including sidewall and skylighting.

Resolite panes are installed like glass. They are factory cut to size, but can easily be cut on the job. Resolite's uniform diffusion of daylight cuts glare, reduces eyestrain. For complete information and name of nearest distributor, write:

RESOLITE Corp., Box 514, Zelienople, Pa.

If you write maker identify as **IEN - 5503**



For Accurate R.P.M. Measurement

Berkeley Industrial Tachometer

FEATURES—
- Accuracy ± 1 r.p.m. for any reading
- Range 0 to 100,000 r.p.m.
- Direct digital reading in r.p.m.
- Designed for production use
- Self-testing in 2 seconds
- Does not require mechanical connection to rotating part
- Printed record if desired

Complete application data on request; write for details.

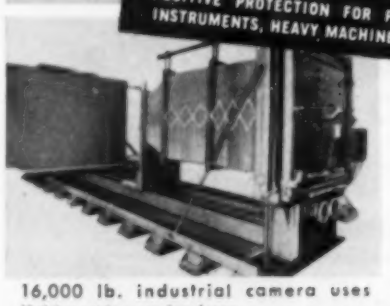
M-28

Berkeley *division*
BECKMAN INSTRUMENTS INC.
Dept. Q-5, 2200 Wright Ave., Richmond, Calif.

If you write maker identify as **IEN - 5504**

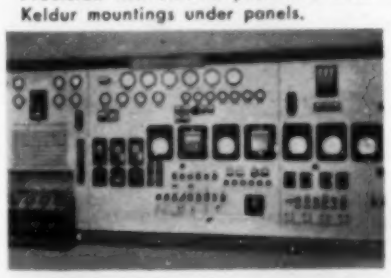
KELDUR for positive SHOCK and VIBRATION isolation!

POSITIVE PROTECTION FOR PANELBOARDS, PRECISION INSTRUMENTS, HEAVY MACHINERY, DELICATE PROCESSES



16,000 lb. industrial camera uses Keldur strips under base.

Precision instruments protected with Keldur mountings under panels.



KELDUR PADS

solve problems of VIBRATION, EXCESSIVE WEAR AND NOISE

Versatile KELDUR has both elasticity and damping qualities in the proper proportion for maximum effectiveness. Pads are easy to install and impervious to cutting oils, gasoline and diesel fuels. Proven reliable on ducts, motors, power presses, instruments, panelboards, generators, industrial cameras and super-delicate equipment.

KELDUR—THE EXCLUSIVE PRODUCT OF

HOBSITE PRODUCTS COMPANY
308 SUSSEX ST., HARRISON, N. J.

AVAILABLE IN SHEETS OR CUT TO SPECIFICATION — WRITE FOR NEW BULLETIN

If you write maker identify as **IEN - 5505**

WANTED!

PUMPING JOBS NOBODY ELSE WANTS!

Modified type "SW-0" vertical shaft pump built by Nagle for severe service in an atomic energy plant.

You can buy lots of good pumps, *but* NAGLE PUMPS are built to survive in those applications where ordinary pumps fail.

If you must pump highly abrasive mixtures, corrosive liquids, hot solutions or heavy slurries, then you will save by using NAGLE CENTRIFUGAL PUMPS. Engineered to your specific requirements—The right design, the right materials of construction. Horizontal and vertical shaft types in complete range of sizes.

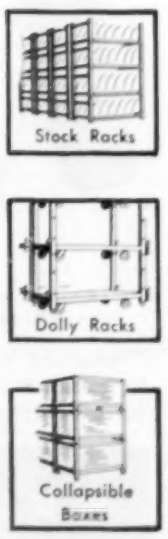
SEND FOR CATALOG 5206

NAGLE PUMPS

NAGLE PUMPS, INC.
1241 CENTER AVENUE, CHICAGO HEIGHTS, ILLINOIS

PUMPS FOR ABRASIVE AND CORROSIVE APPLICATIONS

If you write maker identify as **IEN - 5506**



Strong, safe, stacking racks, portable and stationary, of welded square steel tubing reduce costs in production storage, order assembly, shipping — *in every industry.* May we show you how we can reduce your handling costs up to 50%?

WRITE FOR THIS NEW CATALOGUE →

EQUIPMENT MFG. INC.
21564 HOOVER ROAD • DETROIT 5, MICH.

If you write maker identify as **IEN - 5508**

SCREW DRIVER . . Employs clutch between T-shaped handle and blade

Source: J & L TOOL COMPANY
Box 82, Dept. IEN, Three Rivers, Mich.

About $4

A spring in the handle of this new Powerclutch screwdriver holds the handle back so the square jaw clutch between the handle and blade is normally out of engagement. The blade is applied in a screw slot and axial pressure on the handle engages the clutch for turning in either direction. Some of the pressure on the handle can be released to disengage the clutch without releasing pressure on the screw so the blade stays in engagement while the handle is turned 60 deg. for another "bite". The tool measures 12 in. in length. The aluminum handle is 3 in. across. The tool steel blade is ⅜ in. in diameter.

If you write maker identify as **IEN - 5509**

ELEVATOR . . Motor operator opens, closes freight elevator doors

Source: GUILBERT INCORPORATED
1105 Frankford Ave., Dept. IEN, Philadelphia 25, Pa.

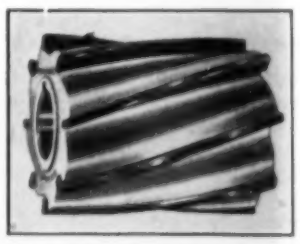
Safe time saver

Two motors are employed, to open the hatch door and lift the car gate, on a freight elevator in this new Carmaster Operator. The mechanism is controlled by a retiring cam that can be presented or retracted by the elevator operator so a hatch way is passed or the elevator stops and the doors open as the elevator is leveling to the floor. The operator reverses the controls to close the doors and move the elevator to the next level from his control position.

If you write maker identify as **IEN - 5510**

MILLING . . Carbide cutter with helical teeth for heavy cuts

Source: SONNET TOOL & MFG. CO.
576 N. Prairie Ave., Dept. IEN, Hawthorne, Calif.



Bulletin, "Slab Mill"

The teeth on this new Helicarb carbide slab milling cutter produce a shearing action that distributes the load over the length of the cutting edges. The cutter is particularly suited to machine heat treated alloy steels. It develops a uniform chip load that minimizes chatter and protects the carbide teeth. The cutter is standard in 3 and 4-in. diameters and from 2 to 4 in. in width for steel and non-ferrous metals. Clearance on the end of the teeth permits machining steps.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 56

If you write maker identify as **IEN - 5511**

USE THE *Nissen* **METAL MARKER**

TO MAKE **ENDURING** MARKS ON **METAL, WOOD, GLASS, PLASTIC-** *Smooth* OR **ROUGH** SURFACES

The Nissen Metal Marker is a handy, easy-to-use, ball point writing tube. The special, fast drying ink in the 6" x 1" tube withstands heat and weathering and will not chip, fade, peel or rub off in general use.

$1.00 per tube

Available in seven standard colors.

JOHN P. NISSEN, JR., CO.
manufacturers
GLENSIDE, PA.

If you write maker identify as **IEN - 5512**

Add this "TOUCH OF GOLD" to all your polishing jobs

When you standardize on Norton ALUNDUM* abrasive, every polishing job you do gets off to a better start — and finish!

Its thoroughly uniform grains give you thoroughly uniform polishing. No oversized grains to mar surfaces — no undersized grains to loaf on the job. Also, ALUNDUM is specially treated to raise its capillarity. Each grain soaks up cement or glue uniformly and adequately and is held firmly — assuring long-lasting, top-performing wheels.

These advantages mean the product-improving, time-saving "Touch of Gold" in all your polishing, from roughing to finishing, manual or automatic. See your Norton Distributor for complete facts, or write to NORTON COMPANY, Worcester 6, Mass. Distributors in all principal cities.
Export: Norton Behr-Manning Overseas Incorporated, Worcester 6, Mass. G-272

*Trade-Mark Reg. U. S. Pat. Off. and Foreign Countries

NORTON ABRASIVES
Making better products . . . to make other products better

If you write maker identify as **IEN - 5513**

WEIGHS 28 LB

LIFTS 1,000!

300, 1,000, and 2,000 lb capacities

KELLER AIR HOISTS

LIGHTWEIGHT, portable, easy to hang and to service

POSITIVE DISPLACEMENT motor with infinite speed variation up to 17 feet per minute

LOW MAINTENANCE. Overloading, continuous duty, or rapid reversals cannot burn out motor

WRITE FOR CATALOG 86

KELLER TOOL CO. 1329 FULTON STREET GRAND HAVEN, MICH.

If you write maker identify as **IEN - 5514**

Want to ship more orders?

use these SIGNODE strapping machines

If the daily total of containers strapped for shipping isn't impressive, these light Signode Strapping Machines can help step up the output! Both tools tension, cut, automatically feed the seal, and seal rapidly without tiring the operator. Model AC is used on small to medium size containers; model A, on larger and heavier containers, skids and pallets. Model AC frequently is attached to our Model TM-1 tool mount for production line strapping. Ask your Signode man to demonstrate. Or, write for details. *Signode Steel Strapping Co., 2611 N. Western Ave., Chicago 47, Ill.*

THIS SEAL MEANS SIGNODE SECURITY IN SHIPPING

If you write maker identify as **IEN - 5515**

For Production Line Applications and General Lifting

CM COMET ELECTRIC HOISTS

PUSH BUTTON CONTROL

Capacities: ¼ to 2 tons

PENDANT ROPE CONTROL

● Plug in on 110 single phase or 220—440 volt power lines. Fast. Safe. Herc-Alloy flexible welded load chain. Lifetime lubrication. COMET hoists save energy . . . reduce materials handling costs. Anyone can operate.

COMET CATALOG No. 150—18 pages of illustrated information sent on request or ask your CM Distributor.

CHISHOLM-MOORE HOIST DIVISION
COLUMBUS McKINNON CHAIN CORPORATION
TONAWANDA, NEW YORK
DISTRICT OFFICES: NEW YORK, CHICAGO, CLEVELAND

In Canada: McKinnon Columbus Chain Limited, St. Catherines, Ontario

If you write maker identify as **IEN - 5516**

Stonewall used on laboratory walls

Stonewall BOARD

- FIREPROOF
- WEATHERPROOF
- NEVER NEEDS PAINTING

Ruberoid Stonewall *asbestos-cement* Board is ideal for interior or exterior construction . . . cuts building costs . . . saves maintenance expense. It is fireproof, water-resistant, rot-proof, rat-proof, rust-proof . . . never needs paint. It is strong and rigid, yet bendable and easy-to-work. Can be sawed or scored and broken to size. Takes nails readily.

Write today for literature, cost and where to buy it. The Ruberoid Co., 500 Fifth Ave., N. Y. 36, N. Y.

The RUBEROID Co.
Asphalt and Asbestos Building Materials

If you write maker identify as **IEN - 5517**

SYNCHRON® TIMING MOTOR

"Work Horse of the Industry"

SINCE 1926

Every SYNCHRON Timing Motor must undergo 51 inspections and a grueling final test before shipment! Long-lasting accuracy and dependability are built in!

SYNCHRON Timing Motors start instantly, pull up to 8 in. oz. at 1 RPM, operate in any position at temperatures from -40° to +140° F. Available with gear trains to convert any speed.

Invitation to Designers

If your product requires trouble-free synchronous timing motors or timing machines, get complete, concise engineering data showing how easily SYNCHRON Motors may be applied to mechanisms now in production or in the idea stage.

Consult HANSEN engineers without obligation.

HANSEN MFG. CO., Inc., PRINCETON, IND.

HANSEN MANUFACTURING CO., INC., PRINCETON 2, IND.
Send catalog and engineering data to:
Name .....
Firm .....
Address .....
City ..... Zone ..... State .....

IDEAS FOR YOU

Items of particular interest in the news other than straight new products, development pointing toward the future, unusual procedure to accomplish a point, suggestions for practical action, each to provide ideas for you.

If you write maker identify as **IEN - 5518**

A cartridge of carbon dioxide gas inflates a cuff to immediately stop the flow of blood when this new tourniquet has been applied by wrapping the cuff around an arm or leg between the wound and the heart. The gas pressure is released by twisting the cartridge container. Variations in pressure and compensation for bulk, when applied over clothing, are taken care of by the mechanism. Pressure can be released and reapplied by pressing and then releasing an off-on control button. The assembly weighs 15 ounces. The cartridge is good for about 10 inflations. List price is $45 with a carrier pouch and cartridge container. Worcester Pressed Steel Co., Dept. IEN, Worcester 3, Mass., can supply details.

If you write maker identify as **IEN - 5519**

If you are a manufacturer looking for contacts with inventors whose products you can put into production, or if you are an inventor looking for a manufacturer with whom to do business, you will be interested in the new "Inventor's Sales Bulletin" now being prepared by Science & Mechanics, 450 E. Ohio St., Dept. IEN, Chicago 11, Ill. Manufacturers are invited to fill out and send in a form for free listing of their facilities in the bulletin. No obligation is involved other than agreement by the manufacturer to acknowledge and report promptly on ideas submitted to him. The bulletin discusses inventions and their handling. It contains a list of inventions wanted and a list of facilities offered by manufacturers, with summaries covering their specific interests.

If you write maker identify as **IEN - 5520**

Stainless steel tube, with integral internal fins, has been extruded by Babock & Wilcox Co., 4029 Fourth Ave., Dept. IEN, Beaver Falls, Pa. Production is now beyond the experimental stage and similar tubing can be produced of a number of steels in a limited size range. The illustrated tube section is employed in a heat exchanger with fire on the outside and gas on the inside. The inch indicates size.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 5521**

AMERICAN AIRLINES uses the MULTISTAMP Stencil Duplicator for

LOT LABELLING AIR FREIGHT

Quick! Accurate! Easy! Print shipping information direct on cartons, boxes, packages. Eliminate double operation of preparing labels and then pasting them to the containers. Get 1,000 or more clear, sharp impressions from one stencil without re-inking. New FORM-CUT® Stencil has facsimile of your label or shipping form die-impressed into the stencil . . . then type or write in address or identification data . . . attach to duplicator . . . and print, like using a rubber stamp. Write for Literature and FREE SAMPLE FORM-CUT STENCIL AND PRINT.

THE ORIGINAL HAND STAMP STENCIL DUPLICATOR

Also for addressing shipping tags and labels . . . prints post-cards, menus, forms, bulletins. 8 complete outfits: $9.50 to $99.50, including supplies (f. o. b. factory). At office or shipping room supply dealers.

OVER 30 YEARS **MULTISTAMP** STENCIL DUPLICATOR

If you write maker identify as **IEN - 5522**

"Best Suited" for HIGH TEMPERATURES

VARGLAS SILICONE
CLASS H
TUBING and SLEEVING

for applications requiring prolonged heat endurance at temperatures up to 260°C.

Varglas Silicone tubing and sleeving were developed by Varflex for applications involving continuous operating temperatures up to 260°C. Exceptional stability is combined with the following qualities . . .

Flexibility—Sharp turns and 90° bends cause no cracking or peeling—no loss of dielectric strength.

Dielectrically-Strong—All Grades conform to NEMA and MIL-I-3190 Standards.

Moisture-Resistant—including resistance to salt water, mild alkalis and acids.

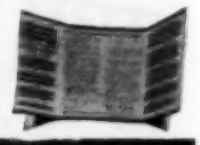
Flame-Resistant—Standard burning test is 45 seconds to burn 1 inch. Can be made self-extinguishing on special order.

Cold-Resistant—Excellent resistance to chafing and abrasion, flexible to —35°C.*

**For temperatures down to —65°C., and for applications requiring extraordinary flexibility, we recommend our new Varglas Silicone Rubber sleeving and tubing. Inquiries invited.*

Varflex CORPORATION
Makers of Electrical Insulating Tubing and Sleeving

Send for **FREE SAMPLES**
Write today for free folder containing 25 different test samples of Varflex insulating sleeving, tubing, lead wire and tying cord.



VARFLEX SALES CO., INC., 306 Jay St., Rome, N. Y.

If you write maker identify as **IEN - 5523**

*first** IN INTERIOR FIRE PROTECTION

ALLENCO

OFFERS

PROMPT DELIVERY
WIDE SELECTION
TOP QUALITY

FIRE EXTINGUISHERS and SUPPLIES

Approvd for fires of Class A, A1, B, B1, C, C1—soda-acid, foam, V/L, pump, gas—several sizes and finishes, also cabinets

*Voted 1st by engineers, architects, contractors, distributors; most widely used. Also complete line of hose fittings for all purposes. Write for catalog or consulting service.

Established 1887
W. D. ALLEN Manufacturing Co.
CHICAGO 6 · NEW YORK 7

If you write maker identify as IEN - 5525

Save on every Dollar!

● We'll make you a straightforward proposition: We will *Guarantee* your abrasive costs per unit of work blast cleaned will be at least 15% lower with Controlled T shot and grit *regardless* of the price you are now paying for chilled iron abrasives!

Controlled T costs more to make. *And because it does—it costs less to use.* Compared to conventional chilled iron shot and grit Controlled T lasts longer, cuts as fast or faster, is easier on your blast cleaning equipment—*and we can prove it.* And while we're proving it you save 15%. Write to the nearest Hickman, Williams office for proof and your complimentary copy of "A Primer on the use of shot and grit."

National Controlled "T" Shot and Grit is Produced Exclusively by

THE NATIONAL METAL ABRASIVE CO. • Cleveland, Ohio
WESTERN METAL ABRASIVES CO. • Chicago Heights, Illinois
AND SOLD EXCLUSIVELY BY
HICKMAN, WILLIAMS & CO.
(INCORPORATED)
CHICAGO • DETROIT • CINCINNATI • ST. LOUIS • NEW YORK
CLEVELAND • PHILADELPHIA • PITTSBURGH • INDIANAPOLIS

If you write maker identify as IEN - 5526

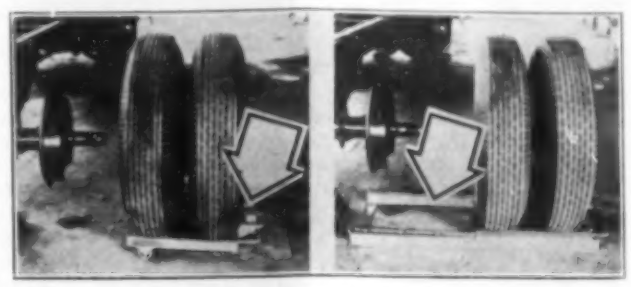
MERRILL
MATERIALS HANDLING DEVICES

MERRILL BROTHERS
56-14 ARNOLD AVENUE
MASPETH, N. Y.

IDEAS FOR YOU—*Continued*

If you write maker identify as IEN - 5528

A truck or bus is raised with a jack and this new dollie is positioned under the wheels to place or remove dual tires

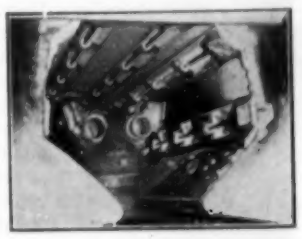


without manual lifting. Two designs employ casters, for use on smooth floors, and a sub-base and roller bearing cradle for rough ground. Weights are 24 and 48 pounds. Alexander-Tagg Industries, Dept. IEN, Hatboro, Pa., is the maker.

If you write maker identify as IEN - 5529

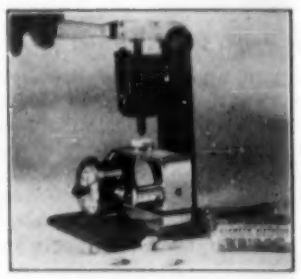
It is necessary for an operator of a certain paper shearing machine to step into this new cage, manufactured by Ballymore Company, 139 Pennsylvania Ave., Dept. IEN, Wayne, Pa., in order to operate the foot pedal that actuates the shear. The pedal extends through the expanded metal of the cage so it cannot be reached unless the operator is standing inside in protected position.

If you write maker identify as IEN - 5530



Chromalox electric radiant heating elements are employed in a new conveyor equipped oven. The heat expands aluminum aircraft cylinders to take "shrink fit" inserts. Temperature is controlled by a percentage input regualtor. Edwin L. Wiegand Co., 7505 Thomas Blvd., Dept. IEN, Pittsburgh 8, Pa. can supply details.

If you write maker identify as IEN - 5531



Tablets made of compressed powder are tested for uniform hardness on a new machine employing a pressure gage manufactured by W. C. Dillon & Company, 14620 Keswick St., Dept. IEN, Van Nuys, Calif. Pressure to break the tablet is registered on the gage and the reading is checked against a pre-determined standard. The gage in this particular case reads to 100 pounds.

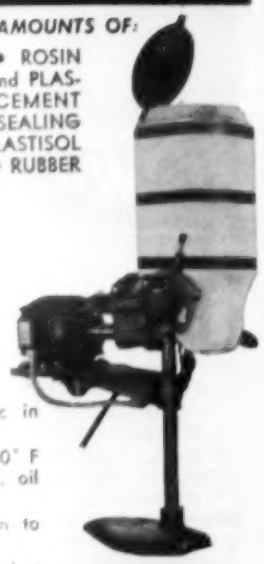
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5532

ROBINSON
METERING PUMPS

FORCIBLY EJECT EXACT METERED AMOUNTS OF:

ASPHALT • RESIN • PITCH • ROSIN ADHESIVES • STEARIC ACID and PLASTER OF PARIS • PORTLAND CEMENT AND VARNISH MIXTURE • SEALING COMPOUND • POLYAMIDE • PLASTISOL PASTES • GLYPTAL MIXTURES • RUBBER BAKELITE



Melt and meter materials that are solid at normal temperatures. Easy ejection through tiny apertures.

Any of 20 discharge quantity settings can be changed in 2 seconds (one model has 50 settings) without tools.

Eject accurately .04cc to 370cc in 2/3 second.

Thermostatic heat from 70° to 500° F . . . Viscosities from #10 S.A.E. oil to 200,000 centipoises.

Unskilled operators quickly learn to do neat, clean work.

The versatile Robinson Metering **Pumps may be the** *economical* **solution to one of your production problems. Write for free** folder.

EDWARD E. ROBINSON
INCORPORATED
P.O. Box 47
95 PARK AVE. • NUTLEY 10, NEW JERSEY
Telephone NUtley 2-4510

If you write maker identify as IEN - 5533

Here's how
KLIXON

PROTECTORS

Safeguard Motors . . . Cut Costs by Keeping Equipment Running

Because Klixon Motor Protectors are matched and built into the motors by the motor builder, they give you a tested and proven combination that assures full motor life.

The Klixon Protector provides accurate motor overheat protection. It prevents motors from becoming dangerously hot and burning out . . . yet always permits the motor to operate at maximum capacity.

Regardless of the motor driven products that you make . . . from oil burners to machine tools . . . it will pay you to specify and insist that your motor manufacturer supplies you with motors protected with Klixon Protectors. The additional cost is low . . . pays for itself many times over by keeping equipment operating minimizing motor repairs and replacements.

Here's What a Leading Motor Repair Shop Has to Say About Klixon Protected Motors

"We have seen so many cases where a seized bearing or starting switch failure to close would have caused a motor burnout but it was prevented by a Klixon motor protector. We feel Klixon Protectors are definitely a big advantage."

SPENCER THERMOSTAT
Division of Metals & Controls Corporation
205 FOREST STREET, ATTLEBORO, MASS.

KLIXON

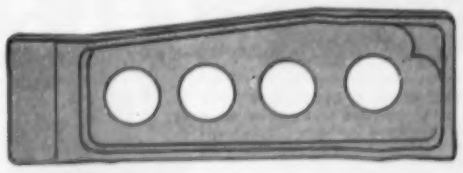
If you write maker identify as IEN - 5534

MUELLER BRASS CO.

ALUMINUM FORGINGS

- STRONG AS STEEL BUT 1/3 THE WEIGHT.
- GOOD DIMENSIONAL STABILITY . . . MECHANICAL PROPERTIES RETAINED AT HIGH SPEEDS AND REASONABLE TEMPERATURES.
- REQUIRE LESS MACHINING AND FINISHING.
- FORGED TO YOUR SPECIFICATIONS.

MUELLER BRASS CO. • PORT HURON 26, MICHIGAN



102

If you write maker identify as IEN - 5535

SHOP TOOL for measuring surface roughness . .

The PROFILOMETER

The Profilometer measures the roughness of practically ALL surfaces, internal and external, in micro-inches (arithmetical or r.m.s. average). It's rugged, portable, and simple to use; no experience needed. Used in thousands of production departments — *at the machines.* Sold and serviced by *specialists* in surface measurement . . . since 1936.

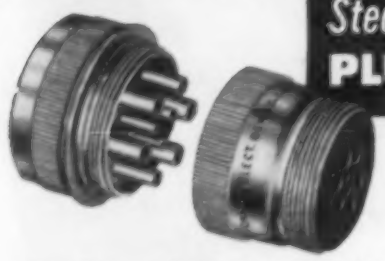
FREE BULLETIN LT89 gives details; shows typical applications. Write!

Profilometer is a registered trade mark.

MICROMETRICAL MANUFACTURING COMPANY
345 S. MAIN STREET • ANN ARBOR 1, MICH.

If you write maker identify as IEN - 5536

Get open flame protection!... with CANNON Steel Shell PLUGS



Semi-exploded view of FW06 Firewall Connector (Straight) Plug

Use Cannon Steel Shell Firewall Connectors, in "AN" or "K" line. They effectively block the fire path at bulkheads by preventing passage of open flame through the connector assemblies at the firewall. Standard units in aircraft . . . *many industrial applications.* Front and rear insulators are available in glass-filled material.

Asbestos-filled material is recommended for jobs requiring operation at elevated temperatures between 500° and 700°F. Consult factory.

Wall- or box-mounting receptacles, and straight plugs, available in 18 shell sizes. Angle 90° plugs in 13 shell sizes. Crimp-on type contacts . . . no solder to melt.

Cannon Electric Company, 3209 Humboldt Street, Los Angeles, California. Factories in Los Angeles; East Haven; Toronto, Canada; London, England. Representatives and distributors in all principal cities.

Refer to Dept. 112

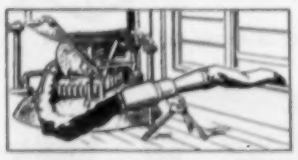
CANNON ELECTRIC

CANNON ELECTRIC Since 1915

If you write maker identify as IEN - 5537

Ventilate CONFINED Places with Vano Design "C" Ventilator-Exhauster

WELDING FUMES are here removed by this Vano Ventilator-Exhauster.



FUMES FROM A REACTOR KETTLE are here withdrawn by tripod-mounted Vano Ventilator-Exhauster. Note non-collapsible suction tubing and discharge tubing.

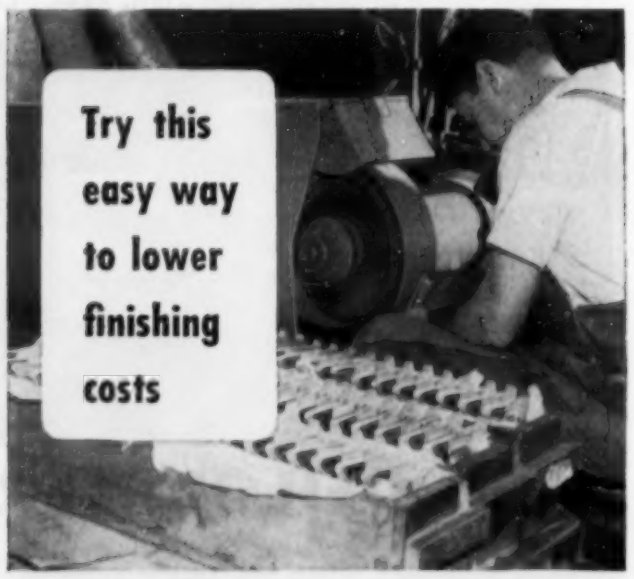
Ideal for withdrawing welding fumes from confined places or directly from the welding rod. Provides greater safety, greater comfort for workers . . . leads to greater work efficiency. Can be furnished with 8" suction inlet to which 8" non-collapsible suction tubing may be attached . . . or provided with multiple inlet nozzles for 5", 4" and 3" suction hose.

Other types are also available for supplying fresh air to men working in confined places, such as tanks, manholes, drums, boilers and shipholds.

For full details on Coppus Vano Design "C" Ventilator-Exhauster write COPPUS ENGINEERING CORPORATION, 145 Park Avenue, Worcester 2, Mass.

ANOTHER COPPUS "BLUE RIBBON" PRODUCT

If you write maker identify as IEN - 5538



If you grind, smooth or polish metal, wood, leather, rubber or plastic products, investigate the finer finishing qualities of Jewel Brand Velvet Joint Abrasive Belts. For once you've tried them, you'll find that sharper, tougher Jewel Brand Belts not only cut cleaner, faster and smoother, but actually last longer . . . reduce downtime . . . save time and labor on job after job. Prove this for yourself. Let an experienced Jewel Brand Abrasive Engineer help you select the *right* belt for your finishing operation now. Write for details. Abrasive Products, Inc., 541 Pearl Street, South Braintree 85, Mass.

JEWEL BRAND *coated* **ABRASIVES**

If you write maker identify as IEN - 5539

CUTTING . . Abrasive disc machine operates wet or dry to cut masonry

Source: FELKER MFG. CO.
1130 Border St., Dept. IEN, Torrance, Calif.

Masonry Saw

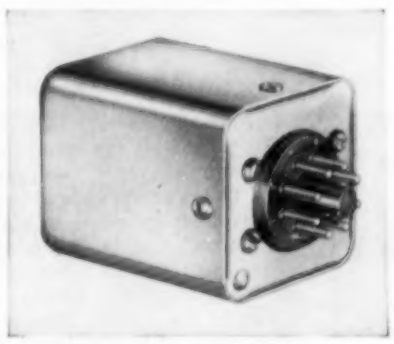
The operator of this new Di-Met Masonry Saw places the work he desires to cut on a wheel mounted table. He raises the cutting disc, on its tubular support frame at the rear of the machine, by operating a pump lever. Then he feeds the work into the blade by moving the table toward the rear. The blade can be set to make a step cut or to cut the work completely through square or at a desired angle. He can use the company's diamond rimmed abrasive blade or an abrasive cut-off disc.

A coolant tray, beneath the work table, feeds a motor driven pump that supplies coolant to the blade for wet cutting. This pump can be started or stopped independently of the main 1½-hp. motor. The machine is designed so the head is removable when the complete assembly is to be moved from one location to another. A selector switch permits connection to a 110 or 220-volt circuit.

If you write maker identify as IEN - 5540

RELAY . . Dust-tight design rates 15 amperes on 110 volts ac.

Source: AMERICAN RELAY & CONTROLS INC.
3601 Howard St., Dept. IEN, Skokie, Ill.



Originally for aircraft

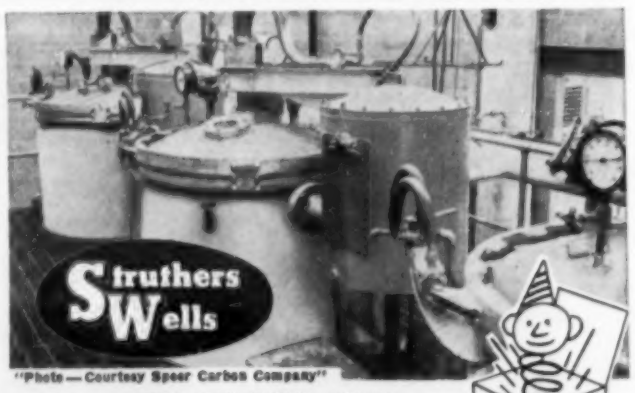
New assembly of the company's Model-DOS general purpose relay includes a drawn one-piece aluminum housing to fit over the aluminum plate on which the relay and its plug-in base are mounted. The enclosure can be removed to inspect the mechanism. Overall dimensions are 2 by 2 by 2½ in. without the plug. Coil rating is 2.5 watts dc. or 3 watts ac. on 220-volt dc. or 440-volt ac. Contact rating is 15 amp. at 110-volt ac. or 32-volt dc.

If you write maker identify as IEN - 5541

New equipment, both stationary and portable, is now available to mix Thiokol liquid polymers with an oxidizing catalyst and apply the mixture to seal structure joints and connections. It has been used chiefly in the aircraft industry to seal and fillet. It can be employed to pot and embed electrical and electronic components, and for plastics tooling. Thiokol Chemical Co., 780 No. Clinton Ave., Dept. IEN, Trenton 7, N. J., can name the equipment manufacturer and supply the liquid and the catalyst.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5542



"Photo—Courtesy Speer Carbon Company"

THE STRUTHERS WELLS

IMPREGNATOR

. . . with the Quick Opening Closure!

for Impregnating Electrical Coils, Aluminum or Magnesium Castings, Carbon Parts and Other Materials

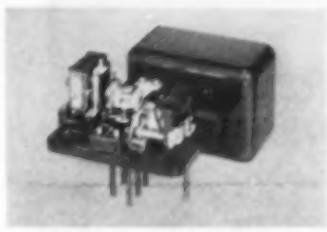
Write for Bulletin B-30 (on your letterhead, please)

The improved Struthers Wells impregnating system illustrated—one of many recent installations—is heated with circulating hot oil, with a separate hot air system for preheating the charge before impregnation. Covers are quickly removed or installed—with great savings in operating labor. Furnished as bare units, or complete with piping, instruments and accessories. Heated by steam, electricity or circulating heat transfer medium.

STRUTHERS WELLS CORPORATION
WARREN, PA.
Plants at WARREN, PA. and TITUSVILLE, PA

If you write maker identify as IEN - 5543

TIMERS *immediate delivery from stock*



TIME DELAY RELAY

When coil is energized, 20 ampere contacts are immediately closed. The delay action is accomplished by a Telechron motor with a mechanism calibrated in 15 second steps, adjustable from 15 seconds to 5 minutes. Timer contacts are S.P.D.T. and rated at 12 amps. Instantaneous recycling. 115 VAC coil operation. Dust tight Bakelite case.

TIMER RELAY

Synchronous motor operates relay for intermittent operation of any electrical device. Relay closes once or twice per hour for periods selected on adjustable dial calibrated in minutes. More frequent intervals may be obtained by substituting a simple timing disc. Contacts rated at 15 amps. Master switch and fuse receptacle. Housed in attractive die cast and stamped metal case with hinged door.

Substantial quantities in stock for immediate delivery at considerably less than market prices.

Huge stocks of relays of practically every type maintained for your convenience. Phone your needs . . . 24 hour delivery!

Telephone
SEeley 8-4146

Write for New 1954 Relay Sales Catalog C-5
JUST OUT!

Relay Sales
4721 W. MADISON STREET
DEPT. 9 CHICAGO 44, ILL.

If you write maker identify as IEN - 5544

HERE'S WHAT *We* MEAN BY— *Miniature* BEARINGS!

Roller Bearings as small as **0.4724" OD** *an* **RMB** *first*

- FOR HEAVY RADIAL LOADS
- SEPARABLE RACEWAYS FOR EASIER ASSEMBLIES
- SHIELDED AGAINST CONTAMINATION
- SIZES FROM 0.4724" OD TO 1.0236" OD
- AVAILABLE NOW

Bring your miniature bearing problems to **RMB.**

A complete line of over 250 miniature and instrument bearings including pivot, radial and roller types are available for prompt delivery. Experimental quantities from stock.

Write for catalog 13, or see our catalog in Sweet's Files.

RMB **LANDIS & GYR** INCORPORATED
45 WEST 45th STREET • NEW YORK 36, NEW YORK

If you write maker identify as IEN - 5545

STORED POWER *at your Finger Tips*

FOR INDUSTRIAL APPLICATIONS

The recognized leader in aircraft accumulator production now offers a line of accumulators for industrial use—either spherical or cylindrical—to best accommodate your space requirements.

Bendix-Pacific Industrial Accumulators, like their aircraft counterparts, furnish the optimum in performance and long life—with a minimum of maintenance. For complete information write to—

Industrial Hydraulic Section

Bendix Pacific
AGRICULTURAL HYDRAULICS
PACIFIC DIVISION • BENDIX AVIATION CORP.
NORTH HOLLYWOOD CALIFORNIA

If you write maker identify as IEN - 5546

Less bounce to the ounce!

Keep fragile and liquid cargoes on an even keel with new Bassick medium-duty "Floating-Hub" casters.

Famous "Floating-Hub" design actually *floats* spring-controlled wheel in frame, providing mechanical resiliency between rim and axle. Despite bumps and rough surfaces, all four wheels remain on floor, absorbing *both vertical and horizontal shocks* safely.

These new casters have 5½" and 7" dia. wheels in swivel or rigid design. Rubber or semi-steel tread. For loads from 100 to 700 lbs. Write for new booklet FH-53. THE BASSICK COMPANY, Bridgeport 2, Conn. *In Canada:* Belleville, Ont.

Bassick A DIVISION OF STEWART SW WARNER

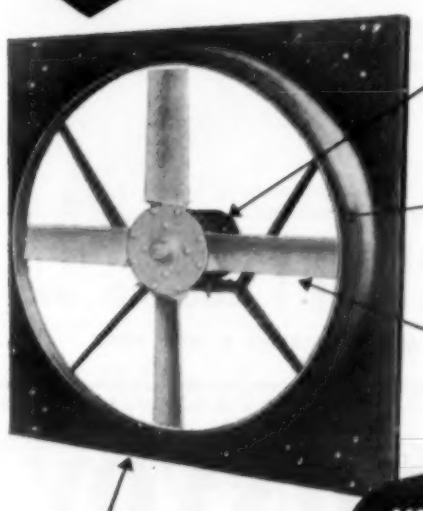
MAKING MORE KINDS OF CASTERS . . . MAKING CASTERS DO MORE

75 YEARS OF CASTER LEADERSHIP

If you write maker identify as IEN - 5547

Big Value in fans

HIGH-PRICED FEATURES AT LOWEST COST



5400 to 36000 CFM (Certified)

HUNTER *Direct-Drive* INDUSTRIAL FAN

This powerful new fan (effective up to ½ in. static pressure) was designed for efficient performance and long life. Its heavy continuous-duty motor is permanently lubricated and sealed. Aluminum alloy blades are non-rusting, non-crystallizing, non-overloading. Direct drive reduces maintenance—no belts to adjust or replace. Blade sizes: 24 to 48 in. Automatic shutters to fit all sizes available at small additional cost.

Hunter

Write for Data Folder and Prices

HUNTER FAN AND VENTILATING CO.
375 S. Front St., Memphis 2, Tenn.

If you write maker identify as IEN - 5549

PAINTING . . Spray gun applies with fluid tank or siphon cup

Source: SHARPE MFG. CO.
1224 Wall St., Dept. IEN, Los Angeles 15, Calif.

Catalog 154

Models 20, 25, 30 and 35, the latter illustrated, comprise a new line of paint spray guns in which tips and nozzles, both internal or external, have been standardized for interchange on all four guns in the line. Two designs include an integral head stem assembly that connects with a cup container. The second employs a threaded fluid intake fitting for either a cup or material line from a pressure fluid tank.

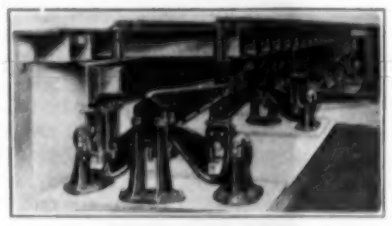
Models 20 and 25 are combination guns with quart capacity screw type cup attachments. Model 20 does not include an air valve or spray width control. It uses the fluid needle to control the action. It has a ¼-in. straight pipe thread air inlet at the rear. Model 25 employs a standard air valve and spray width control valve with a ¼-in. straight pipe thread air inlet at the bottom of the handle. A check valve in the cup lid keeps material pressure constant.

Models 30 and 35 are fitted with ⅜-in. straight pipe thread material inlets for connection to either a pressure tank supply hose or a separate cup attachment. Model 30 does not include an air valve or spray width control. It uses the fluid needle to control the action as in Model 20. Model 35 has a standard air valve and spray width control with a ¼-in. straight pipe thread air inlet at the bottom of the handle.

If you write maker identify as IEN - 5550

WEIGHING . . Railroad scale, four section design, 120 to 200 ton

Source: HOWE SCALE CO.
1041 Strongs Ave., Dept. IEN, Rutland, Vt.



Bulletin 685

Eight primary or main levers, two end, two center, and one transverse lever, are fitted with compensating adjustable connections to transmit correct ratio of the load to a shelf lever and the weigh beam in this new four section scale. The main levers are arranged in pairs, each pair constituting a section. The sections are spaced to provide spans of approximately equal length in the weighbridge. All levers are equipped with leveling lugs. Their faces are machined in line with contact edges of the two end pivots.

Main bearings are suspension type, arranged to absorb shock and thrust, without disturbing the normal position of the pivots in their bearing seats, so the platform can resume its original position and the scale retain its balance. Patented wedge adjustment and platform double bearing yoke construction provide means for inspection and adjustment. Four longitudinal and eight transverse checks are provided to limit the motion of the platform. They act in tension only. Dead rails can be installed to keep locomotives and other non-weighing traffic off the scale rails.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5551

USE THIS NEW SAFETY MATERIAL ALL OVER YOUR PLANT

Safety **GRIP-STRUT** Pat. Pending

NON-SKID—RUGGED—LOW COST

Safety Grip-Strut is a new basic material. All one piece, steel or aluminum, in various sizes and gauges. Sold like lumber, used like lumber and stocked in your storeroom like lumber. Ideal for on-the-job fabricating. Not welded, riveted or expanded. It presents an open space, in a diamond shaped pattern, in excess of 75% of the area for ready access of light and air and gives a positive NON-SKID footing in all directions. Ideal for stair treads, fire escapes, cable trays, work platforms, catwalks, flooring and for original equipment safety treads. Your own mechanics can install it—it's inexpensive, yet permanent and safe.

Write today for new catalog showing loadings and methods of easy application in your plant.

Distributors in all principal cities.

GRIP-STRUT division
THE GLOBE COMPANY
Manufacturers since 1914
4010 S. Princeton Avenue • Chicago 9, Ill.

If you write maker identify as IEN - 5552

Automobile springs ride smoothly through quench tank on a Cyclone Belt

Installation of a Cyclone Conveyor Belt has helped this manufacturer of automobile springs to lower production costs and raise product quality. Hot springs are now carried through the cold water of the quench tank by a rugged Cyclone Flat Wire Belt which is sprocket-driven to pull the load, eliminate slippage and insure exact timing.

When you're looking for ways to cut *your* production costs, don't overlook the many ways that Cyclone Conveyor Belts permit speedier, more efficient materials handling. Cyclone belts are available in a wide variety of styles and sizes, alloys and finishes. One of our experienced engineers will gladly assist you in selecting the best belt for your operation. And write Dept. C-54 for your free copy of Catalog 85.

USS CYCLONE
METAL CONVEYOR BELTS

CYCLONE FENCE DEPARTMENT
AMERICAN STEEL & WIRE DIVISION, UNITED STATES STEEL CORPORATION
WAUKEGAN, ILLINOIS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS

UNITED STATES STEEL

If you write maker identify as IEN - 5553

REMEMBER, MERLIN, WAND WAVING IS STRICTLY HOCUS POCUS!

No, not even a magician can make good on the fantastic claims attributed to cheaper solders, *the mystery alloys with a secret ingredient*, that are supposed to equal the performance of higher tin content solders. What really counts is the quality of the soldered connection . . . something you can always maintain with Kester Solder!

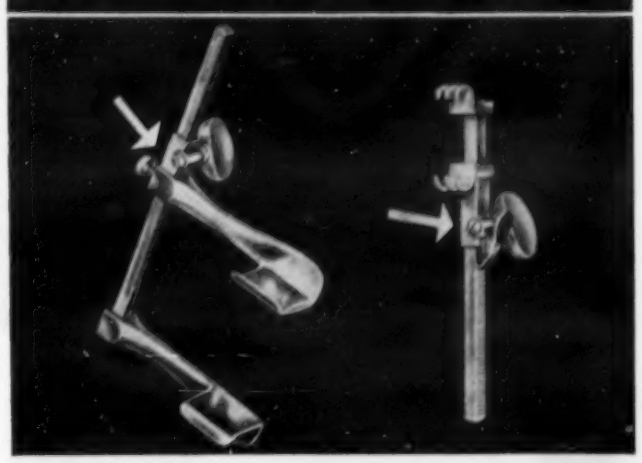
FREE! *Kester Technical Manual, "SOLDER and Soldering Technique." Write today for your copy!*

KESTER

SOLDER COMPANY
4213 Wrightwood Avenue • Chicago 39, Illinois
Newark 5, New Jersey • Brantford, Canada

If you write maker identify as IEN - 5554

SURGICAL INSTRUMENTS EASIER TO MAKE WITH SQUARE TUBING



The two instruments above are (left) for spreading, and (right) for returning ribs to a normal position after an operation.

The maker, George P. Pilling & Son Co., Philadelphia, was looking for a design of the pinion rod support (arrows) that would meet all specifications and save money. Broaching a square hole from a solid bar was costly.

They found their answer in Superior type 304 stainless steel square tubing. It is corrosive resistant; can be silver-soldered, and made to close I.D. tolerances by Superior.

Superior offers you round or shaped tubing in up to 55 analyses—with experience just as broad and varied. Write for Data. Superior Tube Company, 2016 Germantown Ave., Norristown, Pa.

All analyses .010" to ⅝" O.D.
Certain analyses in Light Walls up to 2½"

Superior THE BIG NAME IN SMALL TUBING

If you write maker identify as IEN - 5555

JOHNSON BAND SAWS

SPECIFICATIONS — MODEL J

BOTH WET AND DRY MODELS

Capacity—10" rounds, 18" flats.
Motor—½ H.P. Ball Bearing any voltage available, single or polyphase. (¾ H.P. on wet machine).
Wheel Diameters—16".
Floor Space—66" x 31".
Bed—11" wide, 44" long, 6" deep, 24" high.
Overall Height—(Closed)—39".
Blade Length—11'5" x ¾" x .032". All Standard blades of these specifications can be used.
Weight—Approximately 750 lbs. Crated 800 lbs. Boxed for export 875 lbs.
Speeds—35, 90, 130, 190 feet per minute.
Casters—Optional at slight extra cost.

MODEL B, 5" x 10" CAPACITY, ALSO AVAILABLE

WRITE FOR DETAILS

JOHNSON MANUFACTURING CORP.
ALBION, MICHIGAN

If you write maker identify as IEN - 5556

LISTEN

STOP THE
WHAM-WHAM-WHAM
OF THAT INTAKE OR EXHAUST

with a
BURGESS-MANNING SNUBBER

There is no engine, compressor, blower, vacuum pump, steam or gas turbine too large or too small to be effectively silenced by a Burgess-Manning Snubber.

Too—they give you a choice of plus values as: combination of noise reduction and air cleaning —or heat recovery—or spark arresting — or surge control — or water separating. Insure greater equipment efficiency, better oral communication in your plant, and prevent costly compensation claims.

We invite you to submit your problems — no obligation.

BURGESS-MANNING COMPANY
743 East Park Avenue, Libertyville, Illinois

If you write maker identify as IEN - 5557

FREE! yours for the asking

This 20 page authoritative book on self-priming centrifugal pumps is yours for the asking — no strings attached . . . no obligation.

Now, with a trend in industry toward self-priming pumps, this profusely illustrated book, written by A. S. Marlow, Jr., will give you *all* the facts on centrifugal pump theory and self-priming pump operating principles.

Mail Coupon for your FREE copy today!

MARLOW PUMPS • RIDGEWOOD, NEW JERSEY

Please send me my free copy of "Self-Priming Centrifugal Pumps by A. S. Marlow, Jr.

Name _____

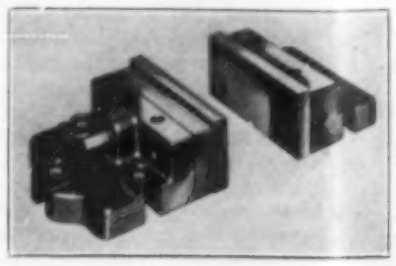
Address _____

City _____ Zone ____ State _____

If you write maker identify as IEN - 5558

VISE . . Hand operated to position work on a machine table

Source: ROCKFORD ENGINEERED PRODUCTS CO.
Dept. IEN, Rockford, Ill.



Fitted with soft jaws

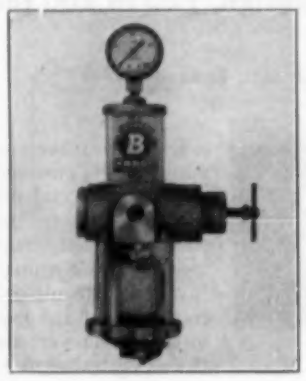
The base, normally forming a part of this new type of vise, has been omitted and the vise is made in two parts to mount on a machine table and center on the table T-slot. Capacity between the jaws is limited only by the length of the table. Both jaws can be keyed to the table slot for accurate centering. Key slots are provided at 90 deg. for location either parallel to or at right angles with the table slot. Eight ½ in. threaded holes take hold down straps and stops.

The clamping jaw is driven by an Acme screw and bronze nut. It is guided on two hardened and ground steel pins. The two jaws are set up at approximately the size of the work they are to hold so comparatively small movement of the movable jaw is sufficient to grip and release. The vise is available in jaw widths of 6 and 8 in. and with key slots measuring $\frac{11}{16}$ and $\frac{13}{16}$ in. in the two sizes.

If you write maker identify as IEN - 5559

LUBRICATING . . Pipe line unit also filters and adjusts air pressure

Source: BRECO MFG. CO.
309 E. Saratoga St., Dept. IEN, Baltimore 2, Md.



Handles oil

Type RFL is a new combination of lubricator, air filter and pressure regulator. The unit installs in a compressed air line leading to equipment that requires lubrication and protection against dirt. It includes an oil reservoir that can be filled without shutting down the air line. A transparent bowl encloses the filter element and shows when it is dirty and requires replacement.

An adjusting screw is turned to regulate pressure which shows on a gage at the top of the assembly. Adjustment can be made in 2-lb. increments in a range to 100 lb. and in 5-lb. increments in a range to 200 pounds. Sizes range from ¼ to ¾-in. pipe connections.

If you write maker identify as IEN - 5560

Compressibility combined with lubricating qualities characterize the unusual liquid known as Comproil. It is available from Wales-Strippit Corp., 361 Payne Ave., Dept. IEN, North Tonawanda, N. Y. It was developed by the company for use in the stripper springs and cushioning members in its line of press tools. It now is available for general use with various degrees of compressibility.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5561

GET
SIMPLIFIED CONSTRUCTION
SUPERIOR PERFORMANCE
FREEDOM FROM TROUBLE

IN THE
MODERN STEAM TRAP

COE DRAINATOR

Moving parts, in conventional steam traps, are subject to corrosion, pitting, sticking and failure.

The trap must then be dismantled and repaired. Production is interrupted. Costs go up.

Drainator — the modern steam trap — avoids these difficulties by eliminating the parts which cause them. It has not a single moving part but is operated by properties in the steam. A fluctuating water level in the gauge glass signals that the trap is functioning properly.

Write for the complete and interesting story now.

The COE MANUFACTURING CO.
504 BANK ST. PAINESVILLE, OHIO

If you write maker identify as IEN - 5562

This single high vacuum gauge

ranges from 0.5mm to 10^{-7}mm Hg

It's the Philips Gauge, Type PHG-09, developed by CVC to accomplish, with a single sensing element, the performance usually expected from two-element combination gauges.

This precisely calibrated gauge is equipped with four scales on a single meter face. Its rugged, all-metal gauge tube can be attached to any vacuum system.

The Type PHG-09 Philips Gauge is only one of the family of gauges CVC provides to meet any need for accurate pressure measurement throughout the entire range of high vacuum.

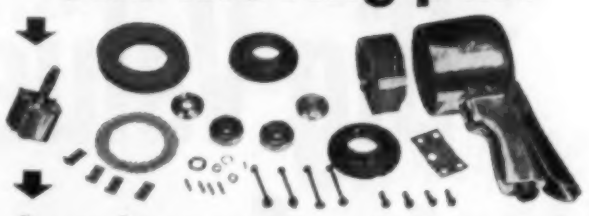
For detailed information on this gauge or on any phase of vacuum measurement, creation, or use, write *Consolidated Vacuum Corporation*, Rochester 3, N. Y. (a subsidiary of Consolidated Engineering Corporation, Pasadena, California).

CVC

Consolidated Vacuum Corporation
Rochester 3, N. Y.
designers and manufacturers of high vacuum equipment
SALES OFFICES: Menlo Park, Calif., Chicago, Ill., Camden, N.J., New York, N.Y., Boston, Mass.

If you write maker identify as IEN - 5563

one moving part



but it moves at 10,000 rpm

Handy Sander is durable. Air operated, it has no gears to wear, nothing to seize. Aluminum alloy housing is practically unbreakable.

Handy Sander is ruggedly constructed for continuous hard use. Economical, it uses lower cost 4" discs or the centers cut from used 7" or 9" discs. Its high speed gets work done faster.

Handy Sander is versatile. Does heavy grinding or light sanding equally well. Ideal for feather-edging. Light weight, (4 lbs.), the Handy Sander is a completely safe, one hand tool that does not tire the operator.

Handy Sander can be used profitably by every metal fabricator. Write for information, today!

WATERVLIET TOOL CO., INC.
1348 BROADWAY, ALBANY 4, NEW YORK

If you write maker identify as IEN - 5564

FAMOUS "CHEM-BOARD"* **CONVOY**
TOTE BOXES

*Chemically Hardened Corrugated Board

SOLD THROUGH LOCAL INDUSTRIAL DISTRIBUTORS

Cost—weigh—50% to 60% less than steel. A wide range of sizes in standard and custom made NESTING, STACKING, VERTICAL TOTE BOXES. Write for complete information, prices, name of distributor in your area.

CONVOY RECORD STORAGE FILES
Sold Only by YOUR LOCAL STATIONER

Used by most famous names in industry and businesses of all kinds. CONVOY "CHEM-BOARD" files for record storage made in letter, legal, and 12 other sizes. Stack to ceiling, mate together. Call your local stationer or write for name of stationer nearest to serve you.

CONVOY, INC.
Canton 6, Ohio
P. O. Station B, Box 216-1

If you write maker identify as IEN - 5565

TYPE "S"
ROTARY UNION

All Past Advantages: This new Field Repair ROTARY UNION has all of the advantages of former models. It is self-aligning, self-adjusting, and will give you the same long trouble-free service which has made the ROTARY UNION the favorite of mill men.

Plus Field Repair: Now you can repair ROTARY UNIONS in your own shop. Any ordinary mechanic can do this in a few minutes with standard maintenance tools.

Former Models Are Convertible: A simple conversion kit enables you to quickly convert former models into field repair units.

Contact our nearest office for full details or write Dept. 5E for our new catalog.

*Trade Name

"Where *Good Connections* Count"®

PERFECTING SERVICE CO.
332 Atando Ave. Charlotte, N.C.
(Home Office & Factory)

Atlanta
Chicago
Cleveland
Providence
New York
Montreal
Toronto

If you write maker identify as IEN - 5566

Operator sands down pips and rough spots before paneling passes between Pittsburgh brushes shown under exhaust hood.

Modern way to dust walls and ceilings

In producing wall and ceiling panels at the Barclay Manufacturing Co., New York City, dust caused by routing simulated "mortar lines" settles on the panels. The panels must be "dusted"—the dust *completely* removed—before they can be bake-finished.

Brushes originally used had a short life span, wore unevenly, and did so poor a job that many baked panels had to be completely refinished to pass inspection. Since even a "fairly good" brush would not do, Barclay searched for the *perfect* brush—and chose Pittsburgh! Result: Better work and costly refinishing eliminated!

WRITE TODAY for your free copy of our new booklet that shows, through actual case histories, how Pittsburgh can help cut your brushing costs. Address: Pittsburgh Plate Glass Co., *Brush Division*, Dept. W16, Baltimore 29, Md.

PITTSBURGH *Power Driven* BRUSHES

BRUSHES • PAINTS • GLASS • CHEMICALS • PLASTICS • FIBER GLASS

PITTSBURGH PLATE GLASS COMPANY

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

If you write maker identify as IEN - 5568

METER . . Enclosed rotameter, safety glass windows in steel housing

Source: SCHUTTE & KOERTING CO.
State Road, Dept. IEN, Cornwell Heights, Bucks Co., Pa.

Bulletin 18-RG

Four sizes of meter tube are interchangeable in the housing of this new rotameter Fig. 18,200. The tube is protected by safety glass windows at the front and rear. A detachable metal reference scale can be calibrated in units of flow or in millimeters for use with calibration charts.

The meter can be adapted for electric or pneumatic transmission and for remote recording of rate of fluid flow of either liquids or gases. Pipe connection sizes range from ½ to 1½ in. in two scale lengths are 125 and 250 millimeters.

If you write maker identify as IEN - 5569

PROTECTING . . Safety harness for workers in dangerous locations

Source: W. M. BASHLIN COMPANY
Dept. IEN, Grove City, Pa.

Supplement 54-S

Cotton webbing is sewn with nylon thread in the construction of this new safety harness. The webbing is impregnated to protect against attack by oils, acids, chemicals. Forged hardware and hand set copper rivets are employed. The harness is intended for men working in manholes, gas tanks, underground lines, roofs and boilers.

If you write maker identify as IEN - 5570

GRINDING . . Flexible shaft machine, variable speed from 700 to 50,000 rpm.

Source: METAL REMOVAL CO.
1546 N. Orleans, Dept. IEN, Chicago 10, Ill.

No gears

Ultra-Flex trade names a new stand mounted flexible shaft machine employing a 1-hp. three phase motor. Belt connection is to a variable speed transmission providing an output range between 700 and 50,000 rpm. Speed is selected by turning a knob on the face of the housing. The flexible shaft is fitted with a nose piece to take carbide burrs, mounted wheels, abrasive discs, buffing wheels, grinding wheels from $\frac{1}{16}$ to 7 in. in diameter.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5571

ANYWAY YOU LOOK AT IT . .

FORT WORTH Hi-Cap *High-Speed* Elevator Buckets

GIVE
GREATER CAPACITY
LONGER LIFE

Made of HEAVY GAUGE STEEL—

All Welded No Rivets

FORT WORTH

HI-CAP buckets are designed for high-speed elevators, although they may be used for replacements in old elevators where increased capacity is required. They are suitable for use in either chain or belt elevators and will discharge properly at high or medium belt speeds. They may be spaced on very close centers, or continuous.

WRITE FOR CATALOG SECTION 416

FORT WORTH STEEL & MACHINERY CO.
DEPT. 25 • 3600 McCART, FORT WORTH, TEXAS
FORT WORTH WAREHOUSES: • CHICAGO • ATLANTA • ST. LOUIS • JERSEY CITY • KANSAS CITY • LOS ANGELES • SAN FRANCISCO • MEMPHIS • HOUSTON

If you write maker identify as IEN - 5572

UNIVERSAL

BORING CHUCKS FOR ALL TYPES OF ROUGH AND FINISH BORING

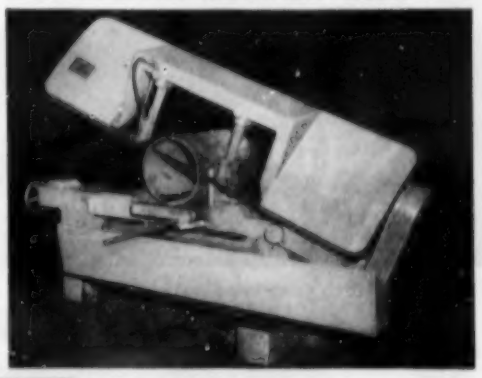
Rigid, precise and accurate. Balanced for high spindle speeds. Positive, built-in center stop. Hardened and ground wearing parts. Completely enclosed mechanism. For complete information write to Universal Engineering Sales Co., 1060 Broad St., Newark 2, N.J.; 5035 Sixth Ave., Kenosha, Wis.; or the home office.

UNIVERSAL ENGINEERING CO. FRANKENMUTH 6, MICHIGAN

183-A

If you write maker identify as IEN - 5573

MODEL 1220



KALAMAZOO **METAL CUTTING BAND SAW**

big, rugged, built for heavier production

MODEL 8C
Cuts 8" round, 16" flat, 8" pipe.

MODEL 610
Cuts 6" round, 10" flat.

KALAMATIC AUTOMATIC BAR FEED ATTACHMENT for Kalamazoo Metal Cutting Band Saws.

Cuts 12" round, 20" flat stock. Accurate to thousandths of an inch, minimum burr and kerf. Four cutting speeds, four blade-tension adjustments for better sawing, longer blade life. Safety-designed throughout—only cutting section of saw blade is exposed. Positive power from heavy duty 1 HP motor. Available with coolant equipment.

Ask your dealer for details and demonstration.

MACHINE TOOL DIVISION

Kalamazoo TANK and SILO CO.
511 HARRISON ST., KALAMAZOO, MICHIGAN

If you write maker identify as IEN - 5574

And that's not all! This user, who relined his annealing furnace with B&W *lightweight* Insulating Firebrick practically doubled his furnace output.

What's the story behind the remarkable performance of B&W IFB?

Lightweight B&W IFB mean that you have millions of tiny, insulating air cells in your furnace walls—keeping the heat inside your furnace where it can work for you. And because B&W IFB store and conduct less heat, they reduce heating up time and respond quickly to temperature changes, assuring excellent temperature control.

Get all the facts from your B&W Refractories Engineer. Offices in principal cities.

THE BABCOCK & WILCOX CO.
Refractories Division
General Offices: 161 East 42nd St., New York 17, N. Y.
Works: Augusta, Ga.

R-509

If you write maker identify as IEN - 5575

Speed Production... Automatically with T-J RIVITORS

Boost production . . . save labor in aircraft, automotive, farm machinery, stampings of all kinds . . . with T-J Rivitors! Automatically feed and set solid rivets. Electrically-powered Rivitor sets 1/16" to 1/4" diam. solid rivets up to 7/8" long. Air-powered Rivitor sets aluminum alloy rivets up to 1/4" diam. or steel rivets up to 1/8" diam. and up to 3/4" long. Throat depths 8" to 36". Write for bulletins 646 and 847. The Tomkins-Johnson Co., Jackson, Mich.

T-J Rivitor used for automotive clutch plate assembly. Does four-fold job—assembling, setting, inspecting, ejecting.

37 YEARS EXPERIENCE (T-J)

TOMKINS-JOHNSON

RIVITORS . AIR AND HYDRAULIC CYLINDERS . CUTTERS . CLINCHERS

If you write maker identify as IEN - 5576

NEW Portable MULTIPLE OUTLET BOX

Toggle Switch Controlled • Signal Light Indicator

ONLY $8.30 LIST

A highly needed convenience for laboratories, workshops, offices and homes

CASE — 18 gauge steel supported on 4 rubber feet.

WIRING — 3 convenience outlets, one hot, 2 controlled by toggle switches rated 10 ampere at 125 volt, AC-DC. Red signal light illuminates when plugged in. 6 ft. SJ#16 two conductor rubber covered cord with molded rubber two-prong plug.

FINISH — Vista Green baked enamel. Black fittings and cord.

*WRITE for complete descriptive literature.

THE FOSTORIA PRESSED STEEL CORP.
FOSTORIA, OHIO

If you write maker identify as IEN - 5577

WOODEN SHELLS • ROLLS • CORES

for the

TEXTILE • RUBBER • PAPER • PLASTIC and other industries

• The CAP WELD SHELL shown above is designed for heavy duty rolling and offers the maximum in long-life service.

OPTIONAL TYPES
- CAP WELD SHELLS
- MACHINE ROLLS
- LAG ROLLS
- CAPPED END SHELLS
- CAPPED SQUARE SHELLS

These cylinders are all available in standard diameters or can be supplied on order to meet your individual specifications.

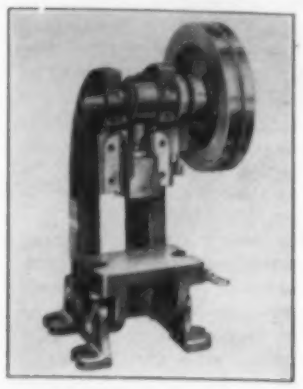
CYLINDER MFG. CO.
HAWTHORNE, N. J.
ESTABLISHED 1916

Send for descriptive Brochure

If you write maker identify as IEN - 5578

PRESS . . Miniature inclinable has 3/4 inch stroke, rates 1 1/2 ton

Source: KENCO MFG. CO.
5211 Telegraph Road, Dept. IEN, Los Angeles 22, Calif.



Precision built

The **crankshaft** in this new "baby" press is made of heat treated alloy steel and carries a roller bearing flywheel and self contained clutch mechanism. The drive collar is made of alloy steel heat treated and ground. The pitman and crankshaft bearings are bronze. The ram and ram guides are 90 deg. V-type. The cast iron frame is heat treated, tested and precision machined. The press is suited for continuous duty. It can be specified for a 1-in. stroke rather than the 3/4-in. standard.

If you write maker identify as IEN - 5579

FLOORS . . Non-skid material to trowel over concrete, steel, wood

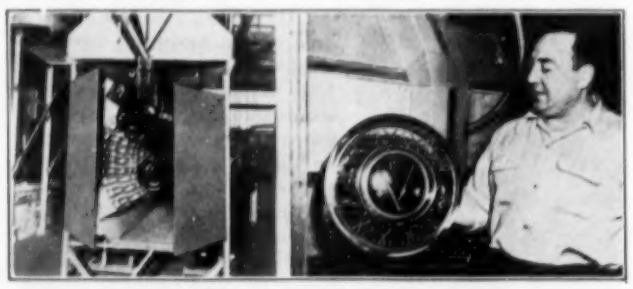
Source: MONROE COMPANY
10703 Quebec Ave., Dept. IEN, Cleveland 6, Ohio

Bulletin C-46-5

X-L Veneer is a new heavy bodied plastic material containing solvents and abrasive filler. It forms a thin veneer that clings tightly to the surface on which it is applied and then provides a skid-proof surface wet or dry. The material is impervious to oil and grease. It can be employed on stairways, ramps, catwalks, aisles, shower rooms, lavatories. It is available in red, green, two shades of gray. It will stand up under truck traffic.

If you write maker identify as IEN - 5580

Hub caps that look like wire wheels are heated to dry the finishing enamel in an oven that employs 24 Chromalox radi-

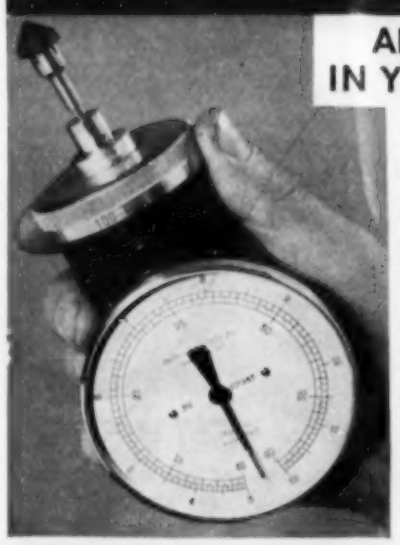


ant electric panels, each rating 10.8 kw. The oven will handle 200 hub caps per hour. Average time in the oven for each cap is four minutes. The heating panels are made by Edwin L. Wiegand Co., 7505 Thomas Blvd., Dept. IEN, Pittsburgh 8, Pa.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5581

DON'T GUESS! TEST R.P.M. AND F.P.M. IN YOUR PLANT



They are the keys to production. Avoid loss of production due to slow speeds and feeds, or excessive wear because of abnormal high speeds by checking them with STICHT portable or permanently mounted Tachometers.

STICHT UNIVERSAL HAND TACHOMETERS

Centrifugal type, combine five ranges in one instrument such as No. 303; 30-12,000 RPM, No. 322; 60-24,000 RPM, No. 346; 120-48,000 RPM. Many others, Bulletin No. 1046.

HERMAN H. STICHT CO., INC.
Tachometer Headquarters
27 PARK PLACE NEW YORK 7, N. Y.

If you write maker identify as IEN - 5582

step up production with STOW flexible shaft MACHINES

Stow STREAMLINER N-40

3-SPEED JIFFY SJ-38

These dependable STOW FLEXIBLE SHAFT MACHINES save production time . . . speed up output . . . help lower production costs. Variable Speed Models shown are easily portable . . . cut down operator fatigue and increase on the job efficiency!

Constant Speed Models available. Also complete line of accessories designed to increase the utility of STOW Flexible Shaft Machines!

WRITE TODAY
for your free copy of Catalog 51

STOW MANUFACTURING CO.
25 Shear St. Binghamton, N. Y.

If you write maker identify as IEN - 5583

a full 60% neoprene by weight

BRONCO 60 Certified

heavy duty portable cords and cables with 60% by weight neoprene jackets

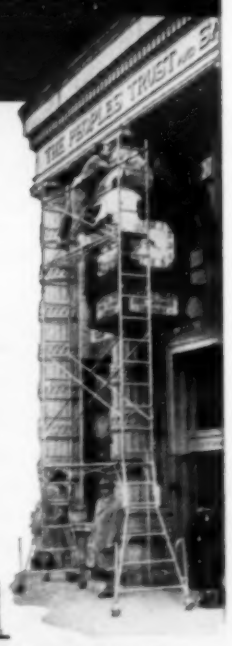
sold nationally by leading electrical wholesale distributors

Western Insulated Wire Co. • Los Angeles 58, California

If you write maker identify as IEN - 5584

where SAFETY and FLEXIBILITY are both important . . . .

Specify BIL-JAX MAINTENANCE TRESTLE



. . . gives work platform of expanded metal at any elevation from one foot above floor on up. Gets to the hard-to-reach places. Ball-bearing casters (locking type) make it easy to maneuver. Patented. U. L. approved. Rent or buy. Distributors in principal cities. Write for catalog. Address Dept. L-5.

Portable and swing scaffolds, hoisting towers, ladders, side brackets, ladder jacks, putlogs.

West Coast: 216 W. Los Feliz Rd., Glendale, Calif.
Export Office: 80 Broad Street, New York 4, N. Y.

GETS YOU UP IN THE WORLD

BIL-JAX INC. Archbold, Ohio

If you write maker identify as **IEN - 5585**

INDIVIDUAL VULCANAIRE DUST COLLECTING UNITS

Are used on surface and other grinders where grinding dust must be removed.

Inexpensive, compact units, with no moving parts. Operated from your present air supply.

Installed in a few minutes, eliminating need for costly centrally located dust collecting systems.

The collector element is mounted on the side of the machine. Quickly cleaned, requiring no refills.

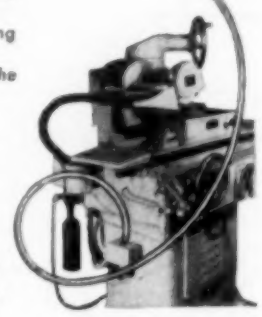
Vac-suction pick-up device (vacuum nozzle) is mounted on the grinding wheel guard or close to grinding wheel on other applications. This mounting permits constant contact with dust as the wheel is moved up or down.

A simple needle valve operates the unit, and can be shut off whenever the machine is not in use.

Available in 700 series for grinding wheels 7" dia. or less.

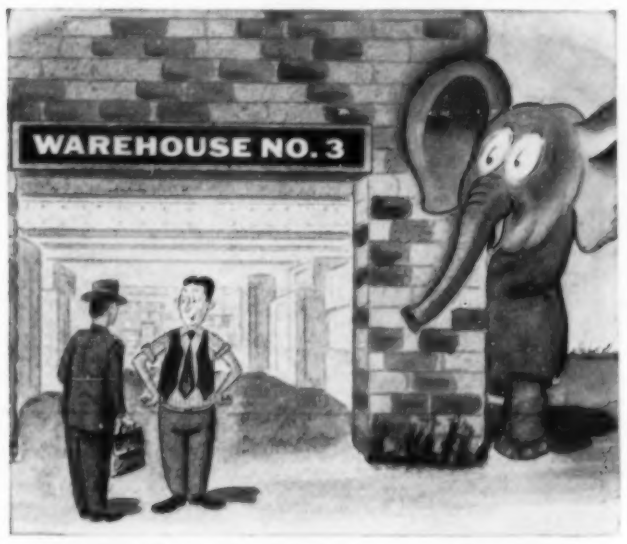
Made by the makers of Vulcanaire *The* jig grinding attachment.

Write on your letterhead for "Dust Collector" Booklet.



VULCAN TOOL CO.
734 Lorain Avenue, Dayton 10, Ohio

If you write maker identify as **IEN - 5586**



"MATERIAL HANDLING!...OH WE HAVE A VERY EFFICIENT SYSTEM"...

We hope our cartoon has managed a chuckle or two . . . however, there is also a serious side to this message.

Management across the country will be taking a long, long look at operating costs in 1954. A major factor in operating costs is Materials Handling. An inefficient, poorly planned system can "bite" deep into 1954 profits. If you are considering modernization or replacement of equipment . . . investigate the MOTO-TRUC line . . . They are the leaders of the industry . . . and like the Elephant . . . remember . . . THERE'S A MOTO-TRUC FOR EVERY PURPOSE.

Send for Bulletin No. 53

Representatives in Principal Cities

The MOTO-TRUC Co.

MOTO-TRUC Designed for the Industry PATENTED

1987 E. 59th STREET • CLEVELAND 3, OHIO

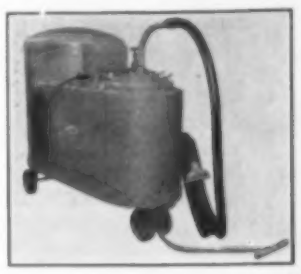
PALLET . . . PLATFORM . . . HI-LIFT TRUCKS

LARGEST EXCLUSIVE MANUFACTURERS OF "WALKIES"

If you write maker identify as **IEN - 5588**

CLEANING . . Portable machine removes, cleans, returns oil to sump

Source: W. R. CARNES COMPANY
S. Main St., Dept. IEN, Verona, Wis.



Catalog 123

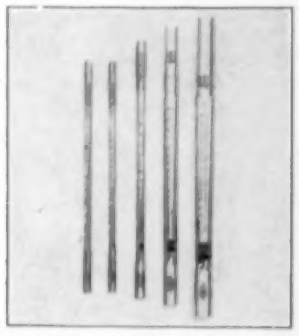
Vacuum is employed in this new Model 20-T Series-NS sump tank cleaning machine to draw dirty oil from a machine sump, to pass it into a storage tank through a removable sludge basket fitted with a replaceable fabric filter bag and, from there, to return the clean oil to the sump. The motor-diven vacum pump handles air only for oil movement as far as the storage tank. Its action is reversed to apply air pressure on this tank when the clean oil is to be returned.

The machine rates 20 gpm. with average oils. It is available in tank capacities of 100 and 150 gallons. The removable sludge basket has capacity of 100 pounds. The vacuum pump is driven by a ½-hp. motor. It is shut off by a limit switch when the storage tank has been filled. A 20-ft. neoprene suction hose and nozzle and one fabric filter bag are suplied.

If you write maker identify as **IEN - 5589**

METER . . Liquid flowmeter calibrates against density, viscosity

Source: EMIL GREINER COMPANY
20-26 N. Moore St., Dept. IEN, New York 13, N. Y.



Instruction manual

Illustrated are representative units in the company's new Predictability line of liquid flow meters. Stainless steel or teflon balls, or both, ride in a glass tube that is circular at the bottom and changes gradually to triangular at the top. The balls slide snugly at all positions between top and bottom. They come to rest at a point where their weight is equal to the force required to flow the fluid through the annular areas.

Because of the tri-flat construction, it is possible to obtain a generalized correlation of the flow of any fluid against the meter readings. The design is standard with plain ends or hose connection. It can be specified with taper joints and male inlet with female outlet. Prices start at $18.50.

If you write maker identify as **IEN - 5590**

New application of the radioactive thickness gage, built by Industrial Nucleonics Corp., 1205 Chesapeake Ave., Dept. IEN, Columbus 12, Ohio, is in sorting out pieces of tin plate by thickness. The detector unit is located in front of the flying shear on a tin plate line. Variations in thickness are charted on a recorder at the operator's panel. When the strip varies above or below tolerance a classifier actuates a gate, down the line from the shear, to separate the cut strip into reject and saleable stacks.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 5591**

for your parts cleaning problems--- **a GRAYMILLS COLD DEGREASER saves time, cleans better, at less cost**

USED BY 3854 PLANTS FOR JOBS LIKE THESE:

- Cleaning dies, tools, etc.
- Flushing machined parts
- Flushing "Hydraulic" parts
- Cleaning bearings
- Cleaning Motors and Electrical Equipment
- Maintenance and Service Work
- Removing Rust Preventatives

THE SAFE, EASY, LOW COST WAY TO REMOVE OIL, CHIPS, GREASE, DIRT and PRESERVATIVES ON JOBS LIKE THIS:

For production, maintenance or service. Use safe, non toxic, low cost solvents. 15 Models. 40 to 300 gallon capcity.

SEND FOR NEW CATALOG

No Installation Headache Portable Too!

GRAY-MILLS

GRAYMILLS CORPORATION
3709 NORTH LINCOLN AVENUE • CHICAGO 13, ILLINOIS
WEST COAST: 4511 MELROSE AVE. • LOS ANGELES 29

If you write maker identify as **IEN - 5592**

BALL BUSHING

The BALL BEARING for your

LINEAR MOTIONS

Sliding linear motions are nearly always troublesome. Thousands of progressive engineers have solved this problem by application of the Precision Series A or Low-Cost Series B BALL BUSHINGS.

Alert designers can now make tremendous improvements in their products by using BALL BUSHINGS on guide rods, reciprocating shafts, push-pull actions, or for support of any mechanism that is moved or shifted in a straight line.

Improve your product. Up-date your design and performance with BALL BUSHINGS! Now manufactured for ¼", ½", ¾", 1", 1½", 2" and 2½" shaft diameters.

THOMSON INDUSTRIES, INC.
Dept. I, MANHASSET, NEW YORK

Write for descriptive literature and the name of our representative in your city.

LOW FRICTION • LOW MAINTENANCE
ELIMINATES BINDING AND CHATTER
SOLVES SLIDING LUBRICATION PROBLEMS
LONG LIFE • LASTING ALIGNMENT

Also manufacturers of NYLINED Bearings — DuPont NYLON with in a metal sleeve — for rotation and reciprocation.

PROGRESSIVE MANUFACTURERS USE BALL BUSHINGS—A MAJOR IMPROVEMENT AT A MINOR COST

If you write maker identify as **IEN - 5593**

Fans.. Blowers FOR ALL INDUSTRY

"Standard Units or Custom Design"

DOUBLE SWIVEL AEROSPOT

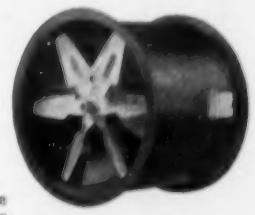
Fans and blowers in a wide range of standard size units are available for specific air moving and ventilating requirements. Special custom designed equipment can also be furnished. Our staff of engineers is at your disposal for competent advice on any ventilating problem. Correspondence invited, without obligation.

SEND FOR CATALOG TODAY!

For column or wall mounting. Saves valuable floor space. Direction of blast adjustable; 360° around Spindle Axis, 90° around Motor Support Axis. Sizes, 20" to 36".

6 Blade DYNAFLOW Unit

Also available in two and four blade types. Sizes, 16" to 30".



DUCTYPE BLOWER

Direct driven, single or tandem fan units. Also available with belt drive. Sizes, 16" to 36".

SOUTH BEND AIR PRODUCTS, Inc. 327 E. GOLFAX AVE. SOUTH BEND, IND.

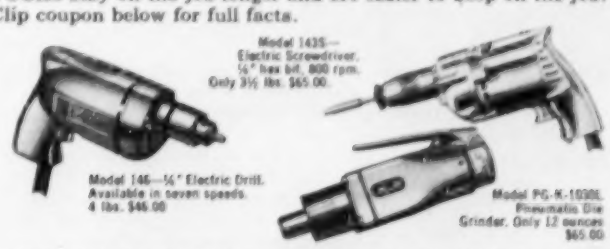
If you write maker identify as **IEN - 5594**

Here Is The Reason So Many Firms Specify....

Mall

POWER TOOLS

Over the years leading firms have proved to themselves that to specify MALL TOOLS is to specify "satisfaction" for everyone concerned with the use and operation of power tools. The reason is that MALL means highest quality, larger selection, dependable service and prices that are lower on the average. Experienced users will verify the fact that MALL TOOLS stay on the job longer and are easier to keep on the job. Clip coupon below for full facts.



These are just a few of the many electric and pneumatic tools made by MALL. Mail this coupon for complete information.

40 Factory-Owned Service Warehouses, Coast to Coast, To Give You Fast, Dependable Service.

MALL TOOL COMPANY 7782 S. Chicago Ave. Chicago 19, Ill.

Send me full facts about MALL (Electric) (Pneumatic)

☐ Drills ☐ Grinders ☐ Screwdrivers

*Name*_____

*Company*_____

*Address*_____

MGI-106

If you write maker identify as **IEN - 5595**

THIS SAVING HAS BEEN OVER $1,000 A MONTH

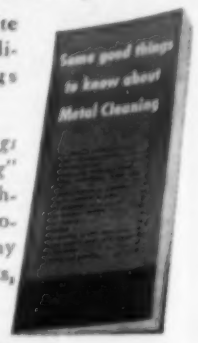
1

2

No. 95 HAS CUT OUR CLEANING REJECTS BY MORE THAN 90%

1 This estimate came from a manufacturer of precision steel parts after 6 months use of Oakite Special Protective Oil to prevent rusting.

2 From a customer who uses Oakite Composition No. 95 for conditioning zinc-base die castings before plating.



FREE Our booklet *"Some good things to know about Metal Cleaning"* describes efficient Oakite materials and methods for tank and machine cleaning, electrocleaning, preparation for painting and many related operations. Write to Oakite Products, Inc., 16A Rector St., New York 6, N. Y.

SPECIALIZED INDUSTRIAL CLEANING

OAKITE

MATERIALS • METHODS • SERVICE

Technical Service Representatives in Principal Cities of U. S. and Canada

If you write maker identify as **IEN - 5596**

Quality

STARTS at 100 lbs.

W. S. P.

Ohio Brass believes in building the same fine quality into its 100-pound (WSP) valves as it does into valves of higher pressures. So on lines where pressures do not exceed 100 pounds for working steam, or 150 pounds for water, oil, or gas, why not use one of the Ohio Brass 100-pound valves? Save yourself the additional price that you would pay for a higher pressure valve.

O-B makes 100-pound (WSP) globes and gates with both threaded and solder-type pipe ends.

Ohio Brass makes a complete line of bronze valves for industrial use. Write today for additional information.

4457-V

O-B VALVES Ohio Brass MANSFIELD OHIO, U. S. A.

If you write maker identify as **IEN - 5597**

Increase Your profits by knowing more about your costs

THE *Simplex* COST RECORDER

gives you 100% accounting of your employees' Time

STOPS TIME LEAKS

PRODUCES INDISPUTABLE RECORDS

REDUCES NON-PRODUCTIVE TIME

Your records show exact starting and ending time for each job... accurate printed records made by the employee, quickly, easily, without loss of time. Simplex Cost Recorders are fully automatic, and give you fast, accurate time computation for payroll make-up, as well as cost accounting.

SIMPLEX TIME RECORDER CO., Gardner, Mass., Dept. I-105

Please give us more information on:

☐ Cost Recorder ☐ Time Cards ☐ Electric Time Stamp
☐ Watchman's Clock ☐ Time Card Files ☐ Time Card Racks

Firm .....

Name .....

Street & No. .....

City ..... State .....

If you write maker identify as **IEN - 5598**

CONVEYING . . Caster mounted stand to support gravity conveyor sections

Source: SPEEDWAYS CONVEYORS INC.
169 Speedways Bldg., Dept. IEN, Buffalo 13, N. Y.

For 10 ft. section

Speedtrux is a new demountable, welded steel, caster equipped, support frame on which to apply a section of wheel or roller gravity conveyor. It is vertically adjustable at both ends to set the sections at a suitable angle and height. The casters are fitted with 3-in. hard rubber wheels. Lock type casters can be specified as well as a locking device that can be installed in the field.

If you write maker identify as **IEN - 5599**

PROTECTING . . Light weight hood designed to keep out nuisance dusts

Source: GENERAL SCIENTIFIC EQUIPMENT CO.
2785 W. Huntingdon, Dept. IEN, Philadelphia 32, Pa.

About $3

New hood rests on top of a worker's head, positions a large plastic window at the front, drapes over the worker's shoulders to protect his neck as well as his face and head against contact with nuisance dusts. The hood can be worn with a respirator. Alone it weighs 5 ounces.

If you write maker identify as **IEN - 5600**

Sludge, resulting in considerable amount from the multiple grinding wheels in the new Norton Type CM-1 grinding machine, is removed continuously and coolant is filtered out by special application of equipment manufactured by Industrial Filtration Co., Dept. IEN, Lebanon, Ind. Sludge and coolant flow to a troughed chain conveyor covered with a sheet of filter paper. A float controls forward movement as liquid level rises. The paper and sludge feed into a tote box at the outer end of the conveyor. The coolant returns to the machine sump.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 5601**

Space Savers

SPLIT BALL BEARING BUSHINGS

. . . giving both radial and thrust capacity

They have solved many design and operation problems. . .

SHEAVES FULCRUMS IDLERS
CAMS OSCILLATING MOTIONS

Shaft rotation at moderate speeds.
Lubricated for extended operation.
Only a quarter inch section height.
For shafts from 7/16" to 1½".

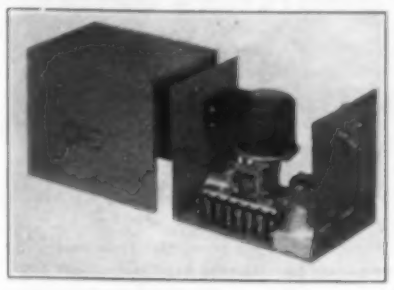
Ask for folder giving sizes and load capacities. Call on our Engineering Department for advice and help on your applications.

SPLIT BALLBEARING CORP.
LEBANON NEW HAMPSHIRE

If you write maker identify as **IEN - 5602**

VALVE . . Solenoid operated to conserve the flow of cooling water

Source: VAN VOOREN PRODUCTS
Dept. IEN, East Moline, Ill.



Water-Mixer

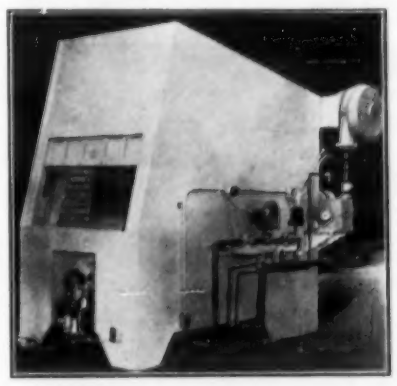
A thermostat in a cooling water circuit actuates a relay that operates with this new solenoid valve. The relay closes the circuit to the solenoid, when temperature rises to a predetermined point, so the valve is opened and cooling water can flow through the circuit. When the temperature drops below the shut-off point, the solenoid circuit is opened and flow stops, except through a small by-pass that is required in certain cases.

Application on a welding machine is an example where the by-pass serves to supply cooling water to an Ignitron contactor and the welding machine transformer. This by-pass is adjustable and can be set to permit flow of only enough water to serve these equipment units. The valve and the controls are enclosed in a metal housing.

If you write maker identify as **IEN - 5603**

HEATING . . Convection furnace gas fired, from 250 to 1,250 deg. F.

Source: BELLEVUE INDUSTRIAL FURNACE CO.
2620 Crane Ave., Dept. IEN, Detroit 14, Mich.



Built to order

Hot gases are recirculated through the work, in the heating chamber of this new gas-fired furnace, by a built-in motor-driven blower. The air-operated door rides at an angle with vertical at the front of the assembly to make an air-tight seal. Piping is color coded and the furnace is available as a packaged unit wired ready for utility connections. It can be specified with electric heat as well as for gas firing and for temperatures to 1,650 deg. F. Work chamber sizes also are subject to specification.

If you write maker identify as **IEN - 5604**

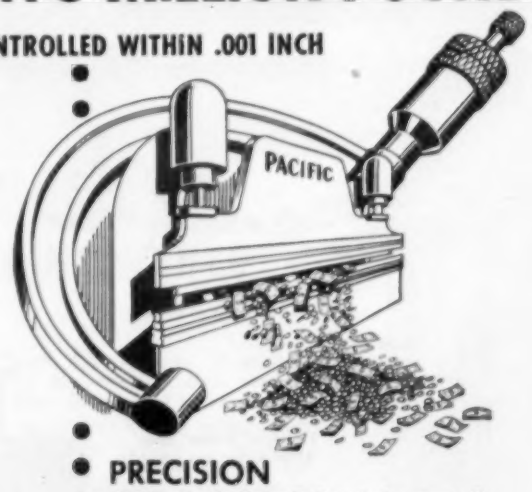
Flexrock 25 is a new teflon pipe dope for use on chromium, nickel, steel, ceramic and plastic pipe threads. It prevents the threads from galling without permitting leakage so a pipe connection can be taken apart some time later. It is suited for application in temperatures between minus 150 and plus 500 deg. F. Manufacturer is Flexrock Co., 3604-C Filbert St., Dept. IEN, Philadelphia 1, Pa. Packaging is in 4-oz. cans at $5 per can as standard list price.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 5605**

TWO MILLION POUNDS

CONTROLLED WITHIN .001 INCH



PRECISION
1000 Ton Pacific Hydraulic Press Brakes repeatedly form bends within .001". The ram remains level within minutes of arc.

PRODUCTION
Pacific Hydraulic Press Brakes in operation today multiple punch heavy steel fence posts at the rate of 1000 per hour.

PROFITS
Precision + Production = Profits.
Investigate today.

PACIFIC INDUSTRIAL MFG. CO.
848 - 49th Avenue - Oakland, Calif.

If you write maker identify as **IEN - 5606**

HANDLING . . Coiled stock grab to lift, carry, turn ½ ton coils

Source: DIXON AUTOMATIC TOOL INC.
2300 23rd Ave., Dept. IEN, Rockford, Ill.

Safety factor of 5

Model B-10 is a new assembly in the company's line of coil grabs, previously described IEN-11860-53. It is designed to handle narrow coils but will take widths to 8 in., starting at ½ inch. Weight is about 25 pounds.

The operator places the unit within the coil that is to be lifted. He moves wedges into position under the coil by means of a ratchet. Only a small amount of headroom is used since the grab wedge operates on the inside diameter. Application can be made with a crane, hoist or fork truck to carry the grab and its load.

If you write maker identify as **IEN - 5607**

LUBRICATING . . Cutting oil contains a metal wetting additive

Source: SUN OIL CO.
1608 Walnut St., Dept. IEN, Philadelphia 3, Pa.

Technical data upon request

Series W contains four new cutting oils that include an improved grade of the additive Petrofac, with metal wetting and oiliness as its properties, developed by the company some time ago. Three of the new oils are transparent type sulfurized for general and heavy duty metal working operations. One is a light colored non-staining cutting oil to employ on free machining steels, brass, aluminum. The company is prepared to make specific recommendations against known machining problems for that oil in the series that can be expected to render the best service.

If you write maker identify as **IEN - 5608**

SWITCH . . Centrifugal design actuates contacts at 1,200 to 5,000 rpm.

Source: KAHN & COMPANY
541 Windsor St., Dept. IEN, Hartford 1, Conn.

Prevents speeding

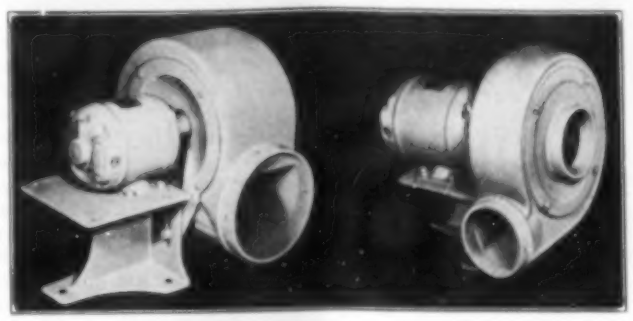
Translator Type KC-223 is a new centrifugal switch to open or close an electric circuit at a predetermined rotating speed. It also is available in multi-speed assembly for automatic operation sequence. Overall dimensions are 2½ in. in diameter by 4½ in. in height.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 5610**

VENTILATING . . Centrifugal blowers for exhaust and for air supply duty

Source: CHICAGO BLOWER CORP.
9867 Pacific Ave., Dept. IEN, Franklin Park, Ill.



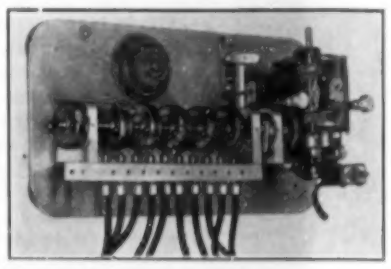
Specifications in Bulletin MD-101

Type LV, to the left in the illustration, and Type BP, to the right, are two new motor driven centrifugal blowers with cast iron housings and base and integral ball bearing polyphase motors. The shafts are mounted in self-aligning grease lubricated ball bearing pillow blocks or can be specified in graphite impregnated bronze sleeve bearings supplied with oil from wool packed reservoirs. Type LV is designed for large volume exhaust duty. It rates to 2,124 cfm. at pressures to 1½ inches. Type PB, for pressure service, rates to 335 cfm. at pressures to 4 inches.

If you write maker identify as **IEN - 5611**

TIMING . . Motor-driven assembly to actuate air cylinders in sequence

Source: MEAD SPECIALTIES CO.
4114 N. Knox Ave., Dept. IEN, Chicago 41, Ill.



Built to order

Adjustable cams are carried on wheels mounted on a motor-driven shaft in this new timer. The shaft carries the wheels and cams above a row of push button pneumatic valves to admit and shut off compressed air to operating valves in the pneumatic circuits to a set of single or double acting cylinders. The assembly shown will actuate six double acting or twelve single acting cylinders.

The number of cam wheels and cams can be increased or decreased by lengthening or shortening the shaft to serve a specified number of cylinders. A set of 10 quick change gears permits cycle variation from 3 to 33 seconds. A lockout lever provides for quick change from continuous to "one shot" push button operation.

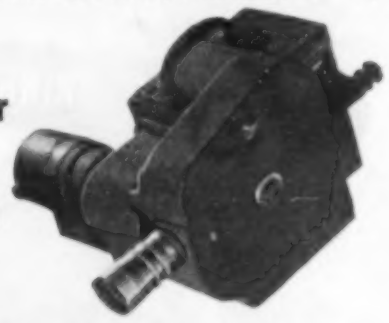
If you write maker identify as **IEN - 5612**

Standard blanks of carbide Grade 370 are now available from stock from Carboloy Dept., General Electric Co., Dept. IEN, Detroit 32, Mich., in Styles 1000 and 2000 3/16 in. thick and smaller, Style 0000 ¼ in. and over, Style 5000 and clamped-on blanks.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 5614**

Here's a trouble shooter for action too fast to see



A Kodak High Speed Camera lets you see what's going on by slowing action down to a walk. It takes up to 3200 pictures a second on 16mm film. An oscillograph trace can be superimposed on the same film. When the film is projected at normal speed, action appears slowed as much as 200 times.

If you have a product design or performance problem involving high-speed mechanical action or fluid flow, a Kodak High Speed Camera may well provide the answer. It is easy to operate and has the right speed range for most industrial applications. To find out how others have used this versatile instrument, write for a copy of the booklet, "High Speed Motion Pictures in Industry."

Industrial Photographic Division
EASTMAN KODAK COMPANY
Rochester 4, N. Y.

the Kodak HIGH SPEED Camera

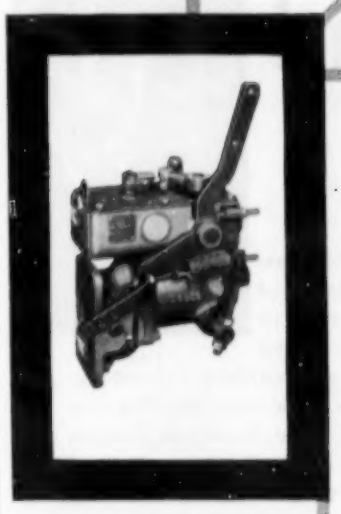
Kodak

If you write maker identify as **IEN - 5615**

high in performance

low in cost

parts & service in the field



PIERCE GOVERNORS

for all Gas and Diesel Engines

Pierce centrifugal governors are your most dependable and efficient control mechanisms for industrial engines . . . from small generator sets to monster power units . . . gas (LPG), gasoline or diesel. For engines requiring extra power to position fuel rack or valve, the Pierce centrifugal with hydraulic booster (for original equipment only) is ideal! Replacement governors and parts are available through your local distributor or fuel injection service station.

For distributor's name or information on special governing problems, write
The PIERCE GOVERNOR Co.
INCORPORATED
1636 Ohio Avenue • Anderson, Indiana

PIERCE — THE MARK OF QUALITY

"SPECIFY PIERCE CENTRIFUGAL GOVERNORS ON YOUR ENGINES"

If you write maker identify as **IEN - 5609**

INSTRUMENT COVERS

another example of the versatility of Lancaster glass

Here's why leading manufacturers prefer Lancaster glass for their instrument covers:

- Won't Scratch
- Won't Warp or Shrink
- Won't Cloud with age
- Distortion-free
- Static-free
- Can have molded-in magnifying lens

Lancaster glass will do a better job on your product, too. For more information — including design assistance without obligation—send the details of your requirements today.

LANCASTER GLASS

THE Lancaster Lens co.
Lancaster, Ohio

If you write maker identify as **IEN - 5613**

FINGERS must be saved- KEEP THEM OUT OF PRESSES with LITTELL Pres-Vac

30 Pres-Vacs cost less than the average cost of only one press accident.

Operated by Compressed Air

SAFETY FEEDERS

- Blanks are fed from a distance of 14 inches
- Eliminates need of putting fingers under press ram

BOOST PRODUCTION 20% TO 100% — Reported by users

ELIMINATE DIE BREAKAGE — Assures Feeding Blanks One at a Time

CUT INSURANCE COSTS — Fewer Accidents Mean Lower Premiums.

Littell Pres-Vac Safety Feeders are made in Single and Multiple types in a variety of cup sizes and styles.

F. J. Littell MACHINE CO.
AIR DIVISION
4133 RAVENSWOOD AVE., CHICAGO 13, ILL.
— District Offices: Detroit and Cleveland —

Write for Catalog

If you write maker identify as **IEN - 5616**

are Sweeping the Electrical Industry!

More and more manufacturers are getting into the swing to AMP FASTON connectors! Timers, clocks, switches, outlets, controls—all types of electrical components when equipped with AMP FASTON tabs not only *cost less* to produce, but offer all the advantages of easier, faster wiring on the line. To install, simply push FASTON on its mating tab. Wiring is accomplished in a fraction of the time required for screw-type terminal posts!

Triple spring action and wide wiping contact of AMP FASTON provides excellent electrical connection. U.L. approved, patented, AMP F CRIMP is voidless—gives high tensile strength and resists corrosion even under most humid conditions. Write today for information and samples!

Aircraft-Marine Products, Inc.
2100 Paxton Street, Harrisburg, Pennsylvania

If you write maker identify as IEN - 5617

Sturtevant MICRONIZER* GRINDING MACHINE

Reduces Solids to Micron Sizes

The new Sturtevant *Micronizer* grinding machine is a fluid jet grinder especially designed to reduce solid materials to particle sizes in the micron ranges.

Sturtevant *Micronizers* are used for simultaneous dry grinding and classification of solids. The variety of materials that can be processed is large and includes both metallic and non-metallic minerals and ores, metals, pigments, insecticides, fungicides, pharmaceuticals, plastics, dyes and numerous other organic and inorganic products. Available in capacities from ½ to 3000 pounds per hour.

*Micronizer is the Registered Trademark of the Sturtevant Mill Co.

STURTEVANT MILL COMPANY
113 CLAYTON STREET, BOSTON 22, MASSACHUSETTS
Designers & Manufacturers of:
DENS AND EXCAVATORS • MIXERS • SCREENS • PULVERIZERS
ELEVATORS • AND COMPLETE FERTILIZER UNITS

If you write maker identify as IEN - 5618

BRAZING BOATS and TRAYS

For faster, dependable brazing with fewer rejects, hold parts or assemblies firmly in place on specially designed boats or trays of Stackpole carbon. Almost any desired shape or size can be supplied. Brazing alloys will not stick to them. Stackpole carbon supporting fixtures withstand severe thermal shock, permitting quick cooling and assuring exceptionally long life.

Write on letterhead for Catalog 40A.

STACKPOLE

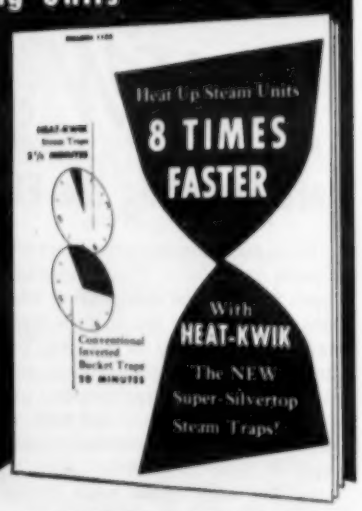
STACKPOLE CARBON COMPANY, *St. Marys, Pa.*

EVERYTHING IN CARBON BUT DIAMONDS

If you write maker identify as IEN - 5619

How to get more production from steam-consuming units

FREE



• This new Anderson folder tells you how to bring your steam-using units up to maximum capacity in one-eighth the time it now takes. You can do this by using Heat-Kwik Steam Traps, the new Super-Silvertop models, that vent air from production units 8 times faster than ordinary inverted bucket traps. You won't want to miss reading about this amazing development.

SUPER-SILVERTOP HEAT-KWIK STEAM TRAPS

MAIL COUPON FOR FREE HEAT-KWIK FOLDER

THE V. D. ANDERSON CO., 1931 West 96th Street, Cleveland 2, Ohio
Gentlemen: Please send without obligation your new Heat-Kwik Bulletin.
Name .....
Address .....
City ..... *State* .....

If you write maker identify as IEN - 5620

HEATING . . Gas-fired burner for use on induced draft air heaters

Source: NORTH AMERICAN MFG. CO.
4455 E. 71st St., Dept. IEN, Cleveland 5, Ohio

Bulletin GB-104

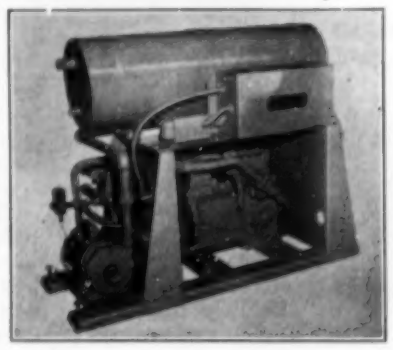
Series 104 is a new gas burner designed to operate under suction or negative draft. During operation, all openings into the register are closed except the shutter openings so flame will not be sucked into the register to overheat it. The assembly consists of the burner and tile, low pressure gas pilot with a gas cock and spark plug, inspirator, limiting orifice valve, full flow gas cock and provision to mount a flame protection device.

Five sizes cover a range or capacity from 800,000 to 5,140,000 btu. per hr. with 2-in. negative draft. Required gas pressure at the cock is 5.2 in. of water when burning butane gas of 2 specific gravity. It is 38 in. of water column with coke oven gas of 0.4 specific gravity. Minimum pilot gas pressure is 1 in. of water. Tile dimensions are 6 to 10 in.

If you write maker identify as IEN - 5621

REFRIGERATING . . Compressor and heat exchanger for fluid cooling

Source: ACME INDUSTRIES INC.
Mechanic & Ganson Sts., Dept. IEN, Jackson, Mich.



Flow Cold Chiller

Self-contained design characterizes the assembly of this new refrigerating equipment in which the compressor and condenser are combined with an exchanger and circulating pump for process liquid cooling. Six sizes in the new line rate 2 to 15 ton in refrigerating capacity. The design represents improvement over the unit previously described IEN-4158-51. Applications include water supply for drinking and process use, lubricant coolant and process solution cooling. Maximum water rates are 12 to 83 gpm. Each unit has independent refrigerating circuits to permit starting and control in accordance with the load.

If you write maker identify as IEN - 5622

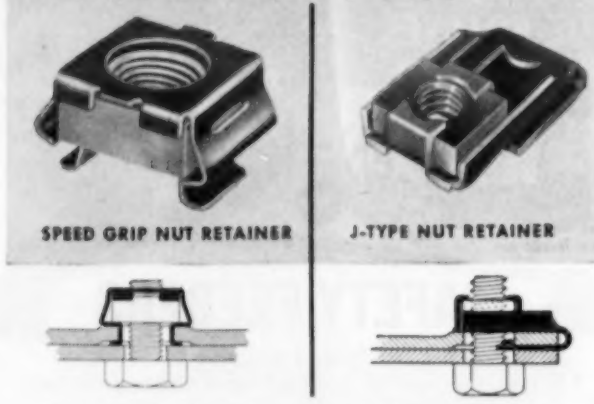
Jan Electronics Corp., 50 Boonton Ave., Dept. IEN, Butler, N. J., is a new organization staffed to provide engineering service, production of electro-mechanical parts, assembly of equipment, packaging and packaging design, to military and commercial specifications, and to manufacture special machinery. The company rates itself particularly skilled in machining rare metals, such as tantalum, molybdenum, tungsten, for producers of vacuum tubes.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5623

TINNERMAN *Speed Grips*®

. . . snap into place by hand, are self-retaining. Save time and material, speed up production!



Tinnerman nut retainers are making production savings of more than 50% for manufacturers everywhere. Welding, staking, riveting operations are out with these self-retaining fasteners. Ideal for blind locations, built-in floating alignment prevents cross threading. No retapping of paint-clogged threads. Tinnerman nut retainers can be applied after painting. Easily attached by hand; no need for special tools, jigs or skills. Available in a full range of sizes for light or heavy attachments. For complete details write:

TINNERMAN PRODUCTS, INC.
Dept. 12, Box 6688, Cleveland 1, Ohio

If you write maker identify as IEN - 5624

New Big Barrel Micrometers have 7 BIG Features

1. **Easy-to-reach Ratchet Cap. A Lufkin Exclusive! With the ratchet right in the cap you can still take "one-hand" measurements. Ratchet is completely enclosed protecting it from dirt and grit.**
2. Big, Sensitive Direct-Feel Thimble.
3. Perfect Balance in Shorter Length.
4. Non-Glare Satin-Chrome Finish — easier reading in either bright or poor light.
5. **Easy-to-Read Markings Widely Spaced on Big Barrels. Circumference of the new barrel has been increased nearly 20% — wider spacings between graduations make it easier to estimate tenths of thousandths.**
6. Rapid Reading — Big Numbers Mark Every Thousandth. Graduation lines are longer and clearer.
7. **Slip-proof Black Crackle Finish on Frame. A Lufkin Exclusive. This durable and attractive finish makes the micrometer easiest to handle, especially when hands are oily.**

Designed by LUFKIN for Faster, Easier, More Accurate Measurements

This new micrometer is designed to make it the best balanced, easiest and most accurate to use. Lufkin micrometers are the easiest to adjust too — the reading line always keeps its original position directly in line of vision, and the thimble doesn't cover measurements on the hub. Hardened and ground one piece spindle. Micro-lapped anvil and spindle faces. Tapered frame for use in restricted space. Available with carbide-tipped anvil and spindle faces.

307 BUY LUFKIN TAPES • RULES • PRECISION TOOLS FROM YOUR DISTRIBUTOR

THE LUFKIN RULE COMPANY, SAGINAW, MICHIGAN
132-138 Lafayette Street, New York City • Barrie, Ontario

If you write maker identify as IEN - 5625

au´to.ma´tion, *n.* Mechanized, automatic handling of materials and parts-in-process, using custom designed production and conveying equipment to match the speed of modern automatic processing machines.

EXAMPLE: Tilt Stand fabricated for American Hard Rubber Co. to handle heavy reels of rubber and aluminum strip resulted in improved production efficiency and eliminated hazardous manual handling.

If you are considering automation—check with Associated Metal Fabricators. We have shared in the design and fabrication of automation equipment for many leading companies. Our engineering assistance is yours for the asking.

NEW "Custom Fabricating for Industry" describing AMF's production and engineering skill for Special Machinery • Industrial Tanks and Ovens • Automation Production Aids. Write for your copy.

MAF 1937 ASSOCIATED METAL FABRICATORS
Division of Jersey Sheet Metal Products, Inc.
18 SERAGO ST. • CLIFTON, N. J. • GREGORY 3-7474

If you write maker identify as IEN - 5626

$200 price reduction ON EMERY CS-10 CRANE SCALE

Increased production makes a new low price on the Emery CS-10 Crane Scale . . . the best in its field . . . now only $995.

The Emery CS-10 Crane Scale provides . . .

- ✔ weighing up to 10,000 lbs. *in transit.*
- ✔ only 19⅛ in. headroom required.
- ✔ guaranteed accuracy ±0.2%.
- ✔ no knife edges, no sticky seals, no wear.
- ✔ rugged industrial-type construction.
- ✔ big 21½ in. unbreakable dial for easy reading.

Order your Emery CS-10 Crane Scale at the new low price. Send for information today.

THE A. H. EMERY CO. NEW CANAAN CONNECTICUT

Please send me descriptive bulletin No. 541.
NAME _____
POSITION _____
Attach to, or write on, your company letterhead.

If you write maker identify as IEN - 5627

HOW YOU CAN SAVE

with ISOMODE* PAD vibration control

A standard, economical package of ten ISOMODE* PADS provides vibration control for as much as 80 tons of machinery—enough to demonstrate that you can save four ways:

1. Save bolting or lagging – machines stay put on any type floor.
2. Save workers' energy – noise levels go down.
3. Save through increased efficiency – vibration won't interfere with nearby equipment or offices.
4. Save maintenance – there's less strain on machines, less building damage.

And all at small cost!. Simply cut to size – no waste. Write for price data and application bulletin No. 415.

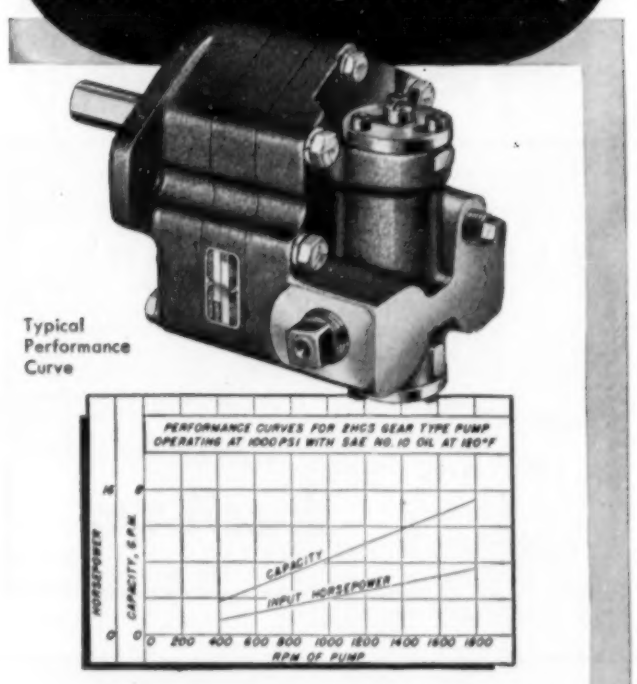
*Trade Mark

THE MB MANUFACTURING COMPANY, INC.
1064 State Street, New Haven 11, Conn.

If you write maker identify as IEN - 5628

For Proven Performance and Lowest Cost

Check the Webster Line of Hydraulic Pumps



• It will pay you to get the facts about WEBSTER Gear-Type Hydraulic Pumps before buying *any* pump. Here is a *complete line* of rugged, dependable pumps from 10 gph. to 10 gpm., engineered to operate efficiently at pressures up to 1200 psi. at speeds of 3600 rpm. or less—90 pumps of various designs and capacities to meet the widest range of requirements!

WEBSTER pumps are the product of skill acquired during nearly a quarter-century of experience. They have established an enviable reputation for efficient, dependable operation.

All WEBSTER pumps lend themselves readily to many forms of adaptation—and to modification for special installations. All are available with built-in relief valve, if desired.

Whenever you require pumps for lubricating, oil circulating, filtering, transfer or quiet hydraulic power applications, we invite your inquiries.

***Write** today for catalog which includes pump data sheets on which you can describe your requirements*

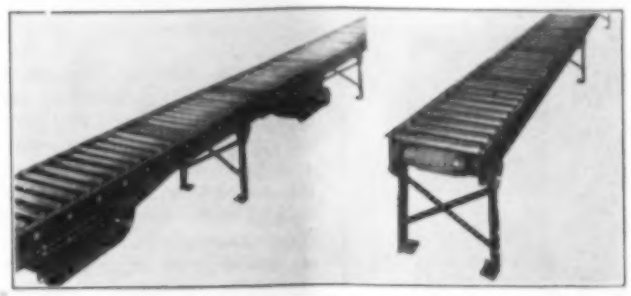
OIL HYDRAULICS DIVISION
WEBSTER ELECTRIC
RACINE, WISCONSIN
ESTABLISHED 1909
"Where Quality is a Responsibility and Fair Dealing an Obligation"

MANUFACTURERS OF A COMPLETE LINE OF OIL HYDRAULIC PUMPS

If you write maker identify as IEN - 5630

CONVEYING . . Live roller sections for power driven horizontal movement

Source: RAPIDS-STANDARD COMPANY
342 Rapistan Bdg., Dept. IEN, Grand Rapids 2, Mich.



For can, crates, boxes, cartons, lumber

Load rollers, rating 250 lb. each, are held in place in slots between the side members of this new Rapistan LR conveyor. They ride upon a belt which, in turn, is supported by pressure rollers assembled in 5-ft. adjustable sections in the main 10-ft. conveyor sections. Belt tensioning mechanisms and motor operated driving heads are located at suitable points along the conveyor line. They suspend from the side members. The construction features enclosed operating parts and provision to protect personnel against injury.

The conveyor is made up of 10-ft. sections that can be combined to give unit lengths to 150 feet. Eight frame widths range from 15 to 39 inches. Standard speed is 80 fpm. with other speeds to specification between 60 and 200 fpm. The end and drive pulleys are equipped with Sealmaster self-aligning ball bearings and pressure lubricant fittings. All other bearings are permanently grease packed.

If you write maker identify as IEN - 5631

WELDING . . DC. arc machine operates on rectified three-phase input

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

Operates without noise

Output range, with this new Type WR40A rectifier type machine, is 70 to 500 amperes. The machine is rated at 400 amp. and is intended for 60 per cent duty cycle, particularly in repair, maintenance and construction work. Standard assembly employs a three-phase selenium rectifier and a stepless current control.

Class-H silicone insulation protects against moisture, fumes, and contact with chemicals. A reversible 14-in. fan supplies ventilation. Air flow is up to take cool air near the floor and prevent recirculation of exhausted hot air. Reversing fan action permits cleaning the rectifier stacks.

The machine operates on 220/440-volt ac. and can be specified for two-phase or three-phase input. Dimensions are 35 by 26 by 47 inches. Weight is 660 pounds.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5632

INTERCHANGEABLE *low cost* MARKING

MATTHEWS PORTABLE PRINTER

Reduce marking costs. Use this portable unit to print flat sheets, curved plates, hose, tubes, even-sided bars, etc.

Matthews » 230 Portable Printer weighs less than 8 lbs., holds 4 sizes of interchangeable rubber type, stores enough ink for hours of printing without refilling.

Write today for literature

JAS. H. MATTHEWS & CO.
3948 FORBES ST. PITTSBURGH 13, PA.
BOSTON • CHICAGO • PHILADELPHIA • CLIFTON, N. J.

If you write maker identify as IEN - 5633

Uarco, Inc., Chicago manufacturer of business forms reports a savings of more than $1600 a month with an International Retractable Anvil stapling machine.

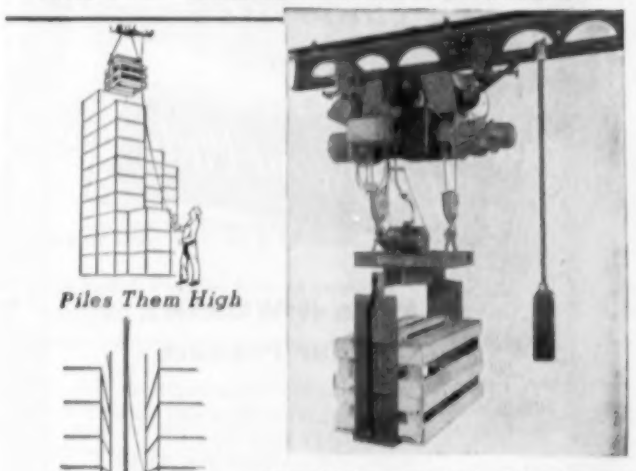
The stapler, a double-headed, air operated model priced at only $3400, is used to close filled cartons from the outside, top and bottom simultaneously. Daily volume is 2,500 cartons of varying sizes . . . in a 12 hour period.

International Stapling Machines will save you as much as 50% on shipping costs . . . write for additional details.

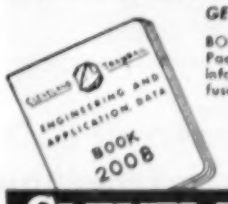
INTERNATIONAL STAPLING MACHINES
INTERNATIONAL STAPLE & MACHINE COMPANY
805 East Herrin Street, Herrin, Illinois

If you write maker identify as IEN - 5634

CRATE GRAB AND CARRIER



Completely motorized. Lifts one or more boxes at a time to 20 ft. height. Motor-driven grab arms spread from 18" min. to 36" max. Enables quick, safe stacking at great heights. Increases storage capacity.

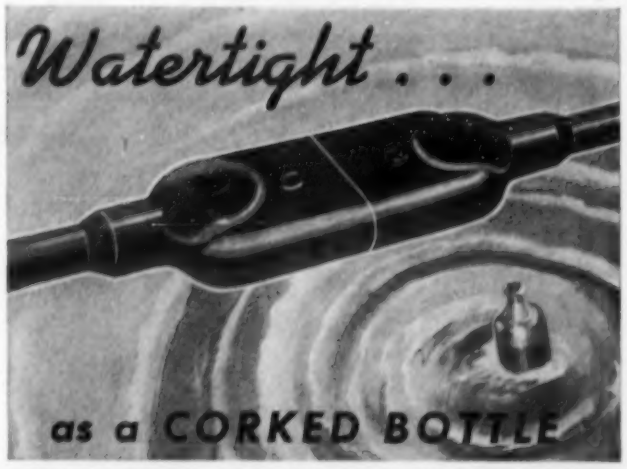


GET THIS BOOK!
BOOKLET No. 2008
Packed with valuable information . . . Profusely illustrated.

CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
4202 East 285th Street, Wickliffe, Ohio

CLEVELAND TRAMRAIL

If you write maker identify as IEN - 5635



Moisture cannot penetrate the one-piece Neoprene body of a JOY electrical plug . . . when engaged, even its contacts are enclosed in a protective Neoprene housing through the *cork-like* action of JOY's famous water-seal. Permanently vulcanized to cable, it cannot crack . . . won't lose its shape . . . and requires no special considerations to insure a long life of useful service. A favorite since '26, JOY electrical connectors are now available in styles and sizes for nearly any portable electrical power transmission need. Why risk electrical misfits when the best actually costs less, in the long run? For more details ask for your free copy of Bulletin MC108 today!

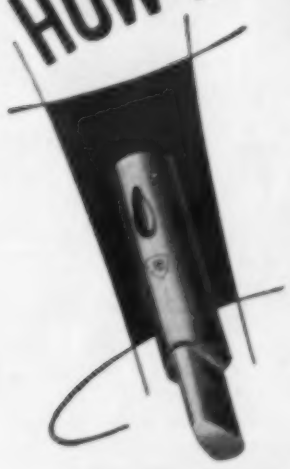
ME 152.4

MORE THAN 100 YEARS OF ENGINEERING LEADERSHIP

JOY MANUFACTURING COMPANY
HENRY W. OLIVER BUILDING, PITTSBURGH 22, PENNSYLVANIA
IN CANADA: JOY MANUFACTURING COMPANY (CANADA) LTD., GALT, ONTARIO

If you write maker identify as IEN - 5636

HOW R-B PUNCHES OPERATE



R-B standardized punches and die buttons are inserted in their retainers with a simple push and a twist.

Punches and die buttons are instantly removed by inserting a tanged tool in retainer hole to release the locking ball.

Each R-B retainer is equipped with a spring loaded locking ball which engages the recessed portion of standard and special R-B punches and die buttons. Locked punches and die buttons are always accurately aligned—no additional keying is required.

Use R-B Engineering Service for Your Tough Piercing Problems.

RICHARD BROTHERS PUNCH DIVISION
ALLIED PRODUCTS CORPORATION
DEPT. 76 • 12615 BURT ROAD • DETROIT 23, MICH.

Also Produced in OTHER ALLIED PLANTS
SPECIAL COLD FORGED PARTS • STANDARD CAP SCREWS
PRECISION GROUND PARTS • SHEET METAL DIES MADE OF FERROUS ALLOYS, ZINC ALLOYS OR PLASTICS

If you write maker identify as IEN - 5637

NO COMPETITOR DARES COPY

Your Name Plate

Make it WORTHY Of Your Product

As the maker's "signature," your name plate is one thing that can set your product apart from all others. Make it *distinctive*, and let it reflect the quality you offer.

Let us help you create such a "signature." Our skilled craftsmen, long experience and modern equipment insure finest results. Send a rough sketch or blueprint for design suggestion and quotation.

Write now for "Etched or Lithographed Metal Products," with full color examples of name and instruction plates.

CHICAGO THRIFT-ETCHING CORPORATION
1555 N. SHEFFIELD AVE., CHICAGO 22, ILL., DEPT. F
SUBSIDIARY OF DODGE MANUFACTURING CORPORATION, MISHAWAKA, INDIANA

If you write maker identify as IEN - 5638

GOOD NEWS ABOUT WHEELS

NEWS! About how 44 centers and only 22 bearings give a choice of 144 sizes to 12" x 4".

NEWS! About American Steelite® light-weight champs—weighing up to 9 pounds less than ordinary wheels.

NEWS! About American Tread-Lock method—the tread is *Rolled On So It Won't Roll Off!*

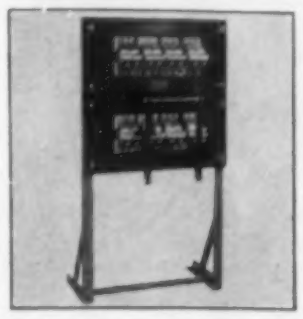
NOW! Get all this NEWS in the NEW bulletin on American Industrial Wheels, from:

The American Pulley Company
4240 WISSAHICKON AVE., PHILADELPHIA 29, PA.
Gentlemen:
I want the NEWS about Wheels—rush me your new American Steelite® Wheel Bulletin.
Name_____
Firm Name_____
Address_____
City_____ Zone____ State____

If you write maker identify as IEN - 5639

SWITCH . . Double throw for plating circuit, 3,000 amp. dc.

Source: COLUMBIA ELECTRIC MFG. CO.
4519 Hamilton Ave., Dept. IEN, Cleveland 14, Ohio



Rear connected

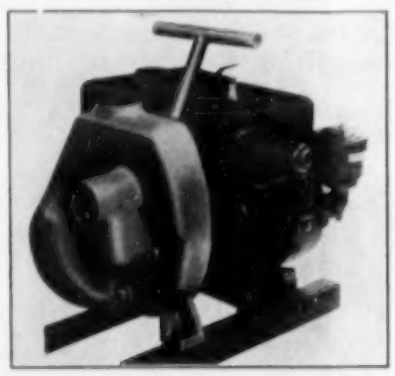
Current flowing through a plating tank is reversed by operating this new 3,000-amp. cam type switch. It is available as a series parallel unit for double commutator generators and consists of two ebony-asbestos panels mounted on angle iron supports with manually operated handles. Line current can be disconnected by placing the handles in a neutral position. A total of 16 heavy duty toggle switches are on the panels, 8 for each circuit direction.

The contact surfaces are cleaned by the inherent wiping action of the laminated copper moving contacts. The switch is rear connected and is supplied with reversing jumpers and four terminals for incoming bus bars. The stationary contacts are reversible. The new switch is a recent addition to an existing line rated 300 to 2,000 amp. for dc. to 15 volts.

If you write maker identify as IEN - 5640

PUMP . . Engine driven centrifugal, self-priming design for utility duty

Source: KENCO PUMP CO.
1125 N. Ridge Road, Dept. IEN, Lorain, Ohio



Carries to the job

Portable No. 114 is a new pump designed to assist in construction work, in dewatering flooded areas and basements, for liquid transfer, fire fighting. It rates 100 gpm. on free delivery and provides a 25-ft. suction lift. It will operate against a maximum head of 100 feet.

The impeller is mounted on the shaft of a 1½-hp. Briggs & Stratton air cooled Stratton air cooled gasoline engine. Intake and discharge are through 1½-in. pipe threaded connections. Construction includes a replaceable steel wear plate. Weight of the assembly is 65 pounds.

If you write maker identify as IEN - 5641

Carboloy carbide routing bits, employed in place of high speed steel on laminated fiber board, are providing tool life of 1,600 pieces as compared with 65 when the high speed steel was used. A ⅜-in. slot is routed through ¾-in. laminated fiber board with a two-blade router bit ⅜ in. in diameter operating at 5,400 rpm. Cut depth is ¾ inch. The Carboloy is Grade 883. Carboloy Dept., 11167 E. 8-Mile Road, Dept. IEN, Detroit 32, Mich., can supply details.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5642

If you write maker identify as IEN - 5643

Low-priced WING NUT for light assemblies

Wing Type PALNUTS combine the convenience of finger tightening, with the security of spring steel locking action that defies vibration . . . all at lower cost than ordinary wing nuts. Wing Type PALNUTS are available in #8-32, #10-32, #10-24, ¼-20 and ⅝-18 sizes, in choice of cadmium, nickel, chrome or other finishes to order.

Send for free samples, prices and literature.

—provides all these advantages at lower cost than plain wing nuts

- Built-in locking action that stays tight until finger released.
- Precision-made to accurately fit standard threads.
- Easy finger tightening or removal, due to ample wings.

WING TYPE **PALNUT** TRADE MARK **LOCK NUTS**
for quick, secure fastening at low cost

The PALNUT Company
59 Cordier St.,
Irvington 11, N. J.
In Canada:
P. L. Robertson Mfg. Co., Ltd.
Milton, Ontario

If you write maker identify as IEN - 5644

LOW COST OPERATION

CENTRIFUGAL PUMPS

When centrifugal pumps are proportioned in size to their duties, costs are kept to a minimum. Eastern Industrial pumps do an efficient job. Weight, space, power, and costs are reduced. Heavy-duty application with trouble-free performance is yours with minimum operating costs.

Write for Eastern Centrifugal Pump Catalog 100-D

Eastern INDUSTRIES, INC.
296 Elm St., New Haven, Conn.

If you write maker identify as IEN - 5645

SpeedMaster portable electric drills are designed and built to stand up under continuous operation at full capacity. They have sealed ball bearings throughout; have broad face gears cut on centers, and every standard, industrial quality feature. They also have the special SpeedMaster advantages of: extra power; cast-in frame supports, bracing, cooling system, etc. —nothing to loosen or rattle; as well as SpeedWay's lighter weight, handiness and in-line thrust that makes straight drilling natural.

SPEEDWAY STANDARD DUTY DRILLS

These handy, economical drills are the logical drills for maintenance, construction, installers and service men. Cast-in aluminum construction. More power per pound than ordinary drills. They will give lifetime service.

Write for Catalog

SpeedWay MANUFACTURING CO.
1885 South 52nd Ave. Cicero 50, Illinois

If you write maker identify as IEN - 5646

THIS number

brings you THIS 42-page catalog

telling you how to get up to 6 to 1

savings on ball bearings

Millions of dollars are wasted because an important principle of bearing design is ignored. This catalog describes the principle and shows you how to save up to 85% on many bearing purchases. Write for it today.

The oldest, largest manufacturer of "Commercial" Ball Bearings

SCHATZ Commercial BALL BEARINGS

THE SCHATZ MFG. CO. • 6750 Fairview Ave., Poughkeepsie, N. Y.

If you write maker identify as IEN - 5647

Lepel's 3 new

LOW COST • PORTABLE

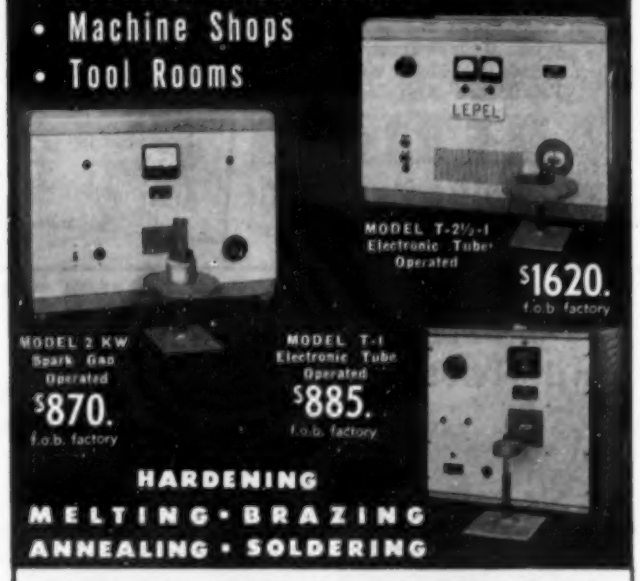
HIGH FREQUENCY

Induction

HEATING UNITS

Ideal for....

- Production Heating of small parts
- Educational Institutions
- Research Laboratories
- Machine Shops
- Tool Rooms



HARDENING

MELTING • BRAZING

ANNEALING • SOLDERING

The Lepel line of induction heating units represents the most advanced thought in the field of electronics as well as the most practical and efficient source of heat yet developed for industrial heating. With a background of half a century of pioneering electrical and metallurgical experience, the name Lepel has become the symbol of induction heating equipment embodying the highest standards of engineering achievement, dependable low cost operation and safety.

Amazing in its speed, Lepel equipment reduces the time required for hardening, annealing, stress relieving, brazing, soldering and melting from minutes to seconds. It performs these operations with a degree of precision and uniformity rarely attained through other processes.

LEPEL Electronic Tube GENERATORS available from 1 kw. to 100 kw.
LEPEL Spark Gap CONVERTERS available from 2 kw. to 30 kw.

WRITE FOR THE NEW LEPEL CATALOG . . . 36 illustrated pages packed with valuable information on high frequency induction heating.

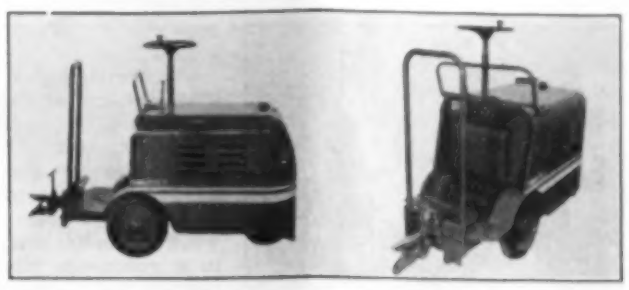
All Lepel equipment is certified to comply with the requirements of the FCC.

LEPEL HIGH FREQUENCY LABORATORIES, INC.
55th STREET and 37th AVENUE, WOODSIDE 77, NEW YORK CITY, N. Y.

If you write maker identify as IEN - 5649

TRUCK . . Engine driven tractor will haul 10 ton on trailers on level

Source: CLARK EQUIPMENT CO.
Dept. IEN, Battle Creek 49, Mich.



To haul a train of trailers

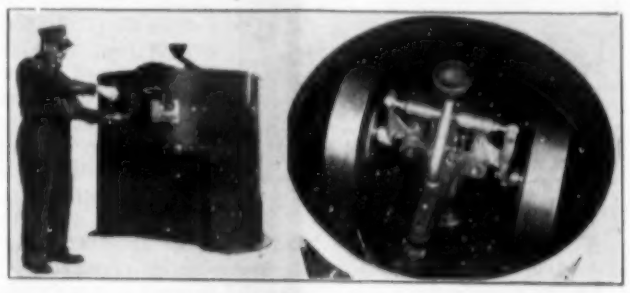
New design of the Clarkette-5 engine driven tractor includes new location of the control linkage and repositioning of the exhaust pipe from the engine at the right side to minimize fumes reaching the operator's platform. The tractor exerts 500 lb. drawbar pull and is equipped with a Continental N-62 engine with control for speeds from 1 to 6.5 mph.

The tractor is particularly suited for one man operation in which the man does his own pick-up from storage to trailers while riding or walking beside the tractor. Control centers at a combination clutch and throttle bar that extends across the housing and is pivoted at normal vertical position on the two sides. Moving this bar forward engages a clutch. A foot operated bar at the rear of the operator's platform is depressed to close an electric circuit to a solenoid brake.

If you write maker identify as IEN - 5650

FOUNDRIES . . Sand conditioner muller type, 500-lb. batch capacity

Source: NATIONAL ENGINEERING CO.
549 W. Washington Blvd., Dept. IEN, Chicago 6, Ill.



Technical data upon request

Model F No. 1 is a new small assembly in the Simpson Mix-Muller line, previously described IEN-12049-51, in 1 and 2-ton batch capacities. The new machine is equipped with spring loaded mullers for an adjustable pressure range between 200 and 500 pounds. Drive connection is by V-belt. A central funnel provides for liquid addition. The helical gear speed reducer operates in oil. Drive is by a 7½ hp. 1,800 rpm. integrally mounted motor.

Pressure can be set for a given type of sand. A plow combines with the mulling action to subject the sand to violent agitation that considerably increases its volume. Agglomerate grains are broken up. Any tendency to form muller cake is minimized and a fluffy sand of high flowability results.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5651

MELTING Faultless ALL-STEEL TRUCK LOCK WITH 2 PUSH-PEDALS FOR SAFETY!

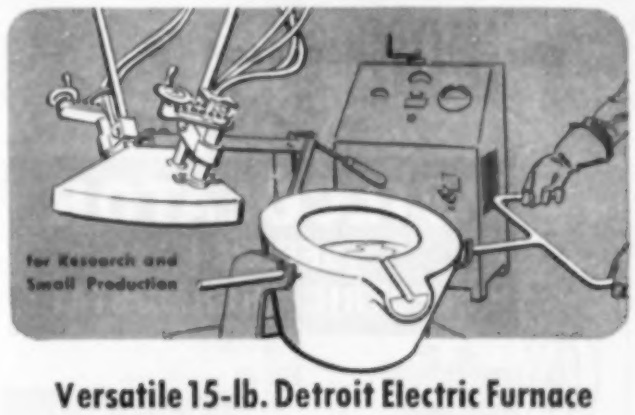
Top plate made with mounting holes to match caster plates.

No more scuffed shoes from rough cast edges. No more soles torn away from shoe tops. Toe presses down on the Faultless Truck Lock —toe *does not lift*. Both foot pedals have non-slip treads for complete safety in operation.

Write for literature and specifications

FAULTLESS CASTER CORPORATION
Dept. IE, Evansville 7, Indiana
Branches in Principal Cities—Canada Factory: Stratford, Ont

If you write maker identify as IEN - 5652



Versatile 15-lb. Detroit Electric Furnace

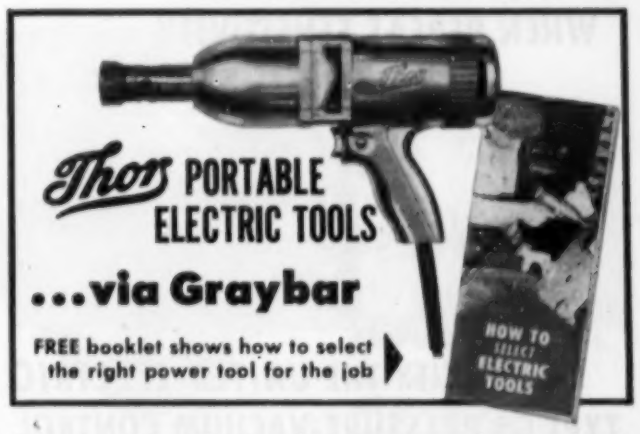
Compact 12 KW, 15-lb., Detroit Electric Furnace excels in a variety of research and small production jobs. Converging indirect arc electrodes in cover force arc down over metal for fast melting. Cover lifts and swings aside for easy charging and pouring. Pot can be transported as crucible or tilted to pour from stand. Insulated pot equipped with permanent lining or removable crucibles. Power unit and meters contained in one cabinet, require only simple wiring to electrodes.

Write today for complete information on Type PT Detroit Electric Furnace.

DETROIT ELECTRIC FURNACE DIVISION
KUHLMAN ELECTRIC COMPANY
1050 26th St. • BAY CITY, MICHIGAN

Foreign Representatives: In BRAZIL—Equipamentos Industrias "Elsa" Ltd., Sao Paulo; CHILE, ARGENTINA, PERU and VENEZUELA: M. Castellvi Inc., 150 Broadway, New York 7, N. Y.; MEXICO: Casco, S. de R. L. Atenas 32, Despacho 14, Mexico City, D. F.

If you write maker identify as IEN - 5653



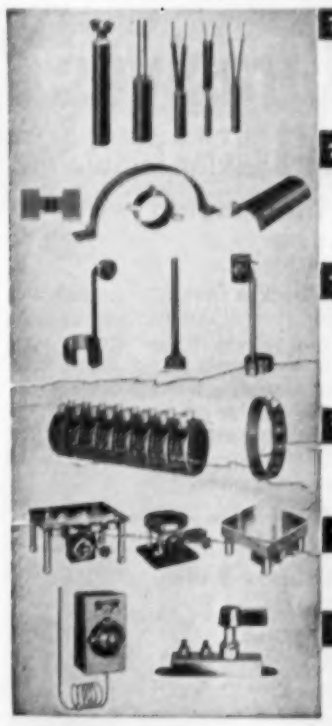
Learn how to get the most for your money when you invest in power tools. Send for this helpful selection guide to the Graybar-distributed line of Thor drills, impact wrenches, screwdrivers, hammers, saws, and sanders. Outlining the tools best-fitted for specific jobs, the booklet also points up important tool construction features that mean longer life and increased efficiency.

Thor tools are furnished for either 115 volt AC or DC — with 220 and special voltages available if specified. Ready interchangeability of all Thor parts allows faster, more economical service for tool users.

For complete information, call your near-by Graybar Representative. *Graybar Electric Co., Inc. General Offices: Graybar Building, 420 Lexington Avenue, New York 17, N. Y.* 323-128

Call Graybar *first* for . . . Everything Electrical GraybaR ELECTRIC COMPANY

If you write maker identify as IEN - 5654



Watlow CARTRIDGE HEATERS

Flexible leads or rigid terminals. Diameters ⅜" to 1 5/16", lengths 1½" to 20". Capacities 50 to 1500 watts.

Watlow STRIP HEATERS

Straight or curved design. Widths ¾" and over, lengths to 72". Post, button and bracket type terminals and flexible leads.

Watlow IMMERSION HEATERS

Straight or curved. Diameter ¾" to 2", lengths 6½" to 67", capacities 150 to 10,000 watts.

Watlow CYLINDRICAL HEATERS

Patented clamping band. Widths 1⅛" to 2", diameters 1⅛" and up. Watt densities up to 45 watts / sq. in.

Watlow HOT PLATES

Polished steel heating surfaces. Portable or flush mounting 3-heat switch for 550°F. to 750°F.

Watlow THERMOSTATS

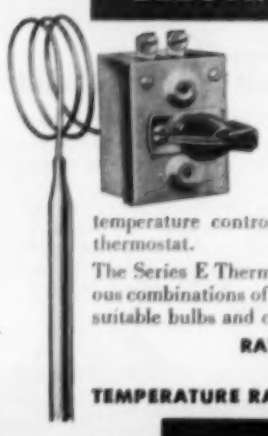
Temperature range 100°F. to 550°F. Built-in double pole on-off switch. Capacities 125V, 35A, 4375 W; 250V, 25A, 6250 W.

WATLOW Since 1922—Designers and Manufacturers of Electric Heating Units
ELECTRIC MFG. CO.
1370 FERGUSON AVE.
SAINT LOUIS 18, MO.

If you write maker identify as IEN - 5655

FOR **HIGH** ACCURACY AT **LOW** COST

WILCOLATOR SERIES E ELECTRIC THERMOSTAT



For all remote control applications where a single pole, slow make and break thermostat may be used, you get excellent sensitivity, close temperature control with this high quality thermostat.

The Series E Thermostat is available in various combinations of temperature ranges, with suitable bulbs and capillary tube lengths.

RATING: 15 amp. 240 volts
20 amp. 120 volts

TEMPERATURE RANGE: 30°F. to 550°F.

for full information, ask for Bulletin 325

THE Wilcolator COMPANY
1001 NEWARK AVENUE, ELIZABETH, NEW JERSEY

If you write maker identify as IEN - 5656

WHEN REPEAT SENSITIVITY IS REQUIRED . . .

. . . SPECIFY THE *UNITED ELECTRIC* TYPE G9 PRESSURE-VACUUM CONTROL

The Type G9 Pressure-Vacuum Control is designed for applications requiring uniform on-off differential between .2" and 10" WC. It is a highly sensitive, precision-built unit with internal or external, calibrated or uncalibrated adjustment. It is watertight unless the adjustment is external.

Switch Ratings: The load-carrying capacity of the switch is directly proportionate to the switch differential. Load ranges from 1 to 15 amp. at 115/230 V., A.C.

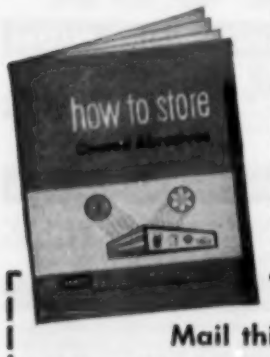
UNITED ELECTRIC CONTROLS COMPANY
80 School Street, Watertown, Mass.

STANDARD & SPECIAL THERMOSTATS & PRESSURE SWITCHES

If you write maker identify as IEN - 5657

Storing Abrasives?

Armour's helpful booklet shows the economical, time-saving way!



This booklet from Armour, maker of *precision* coated abrasives, tells you how to stop losses—in time and money—from improperly stored coated abrasives. Clogging, filling, cracking, loss of grains—these are some of the things proper storage can prevent. Send for your free copy of "How to Store Coated Abrasives."

E5

Mail this coupon today

Please send booklet "How to Store Coated Abrasives."

Name .....
Firm .....
Address .....
City ..... *Zone* ..... *State* .....

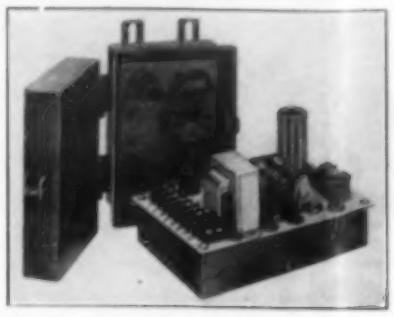
ARMOUR *Coated Abrasives*

Armour and Company • North Benton Road • Alliance, Ohio

If you write maker identify as IEN - 5658

SIGNALING . . Electronic alarm signals preset flow through rotameter

Source: BROOKS ROTAMETER CO.
Dept. IEN, Lansdale, Pa.



Bulletin 165

One sensing coil, or two connected in series, are employed in the actuating circuit of this new Flo-Gard electronic alarm to provide a signal when the metal float in a rotameter tube reaches the coil position. Two coils apply in signaling both high and low predetermined levels. One coil can be used for one or the other if desired.

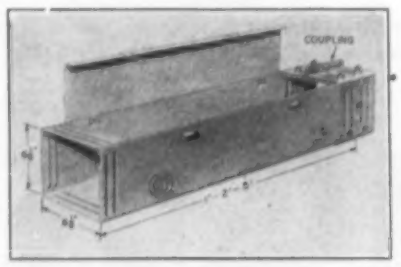
The actuating circuit operates a load relay to close an alarm circuit or perform annunciator or control functions by means of its double-pole double-throw contacts. The alarm is reset by operating a push button after the float has moved out of the sensing coil field.

Power failure or failure of any electronic component will cause the load relay to operate the alarm contacts. Required current in the sensing coil is below 6 milliamperes.

If you write maker identify as IEN - 5659

ELECTRIC DUCT . . Wireway and fittings for electric circuits

Source: NATIONAL ELECTRIC PRODUCTS CORP.
140 Stanwix St., Dept. IEN, Pittsburgh 22, Pa.



Ready to install

Wirewa 6 by 6 in. is a new larger size of the company's previously developed 4 by 4-in. Wirewa sections. It is designed for installation in a plant to permit relocation of electric circuits at minimum cost. It is made in lengths of 1, 2 and 5 ft. with fittings for "T," "L," cross-over and junction boxes to assemble as required.

The raceway is die formed from 0.078-in. steel and is finished in baked gray enamel. It is available in galvanized steel, finished in gray enamel for corrosive locations. Construction includes hinged covers, provision to latch positively, rigid couplings. A special adapter is available for connection to the 4 by 4 Wirewa.

If you write maker identify as IEN - 5660

Paint a little Aquadag, a dispersion of colloidal graphite in water, on the aluminum-base electric lamps you are using and you will have no difficulty in removing them from their sockets. In cases where the thread surfaces are not clean colloidal graphite in alcohol will do the job. Acheson Colloids Co., 2000 Washington Ave., Dept. IEN, Port Huron, Mich., is the graphite manufacturer.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5661

New TOLEDO PIPE CUTTER *for Cleaner Smoother Cut-offs!*

Heavy Duty Wheel and Roller

★ Positive clean-cutting action.
★ Hooks on pipe easily . . . tracks perfectly . . . sturdy malleable frame formed to fit the hand and guaranteed warp-proof.
★ High alloy steel cutter wheels leave practically no burr.
★ Rollers in hook provide a square base when starting tool on pipe. Cuts ⅛" to 2" pipe . . . with speed and ease! Order through your supply house. Write for new catalog. The Toledo Pipe Threading Machine Co., Toledo, Ohio. New York Office: 165 Broadway, Room 1310.

RELY ON THE LEADER! **TOLEDO**
PIPE TOOLS . . POWER PIPE MACHINES, POWER DRIVES

If you write maker identify as IEN - 5662

jari (Self-Propelled) POWER SCYTHE

does the work of 8 men

- Works on rough ground.
- Cuts under fences up to buildings, etc.
- Cuts heaviest growth.
- SAFE: will not throw objects—will not cut operator's foot.
- Lightweight, easy to operate, self-propelled.

One man will cut several acres of heavy growth per day with a Jari. Large wheels designed for heavy cutting over rough areas. It has been adopted by many highway and maintenance departments for its rugged dependable work.

CUTS WEEDS TALL GRASS BRUSH

3 MODELS

JARI SR.: A single purpose machine for heavy cutting on rough, hilly ground. Self-propelled.

JARI CHAMPION: Self-Propelled—Summer and winter application with attachments for plowing snow, reel cutting, weed spraying.

JARI JR.: Self-Propelled—Versatile 4 attachment machine for heavy cutting, weed spraying, snow plowing.

EXTRA ATTACHMENTS *Write for Bulletin*

jari PRODUCTS, INC.
2938-J PILLSBURY AVENUE • MINNEAPOLIS 8, MINNESOTA

If you write maker identify as IEN - 5663

ARCCO . . . NOW OFFERS 8 DAY CHARTS and ROCKWELL CHART DRIVES

EIGHT-DAY ARCCO CHARTS are now available for use on practically all Rockwell-Emco, Foxboro and Westcott orifice meters. Eight day charts for other instruments soon available.

With this NEW Chart Drive 11 rotation speeds are possible. Turrets are available for 2, 3, 4, 6, 8 and 12 hours, also for 2, 3, 7, and 8 day rotation. Standard hub gives 24 hour rotation.

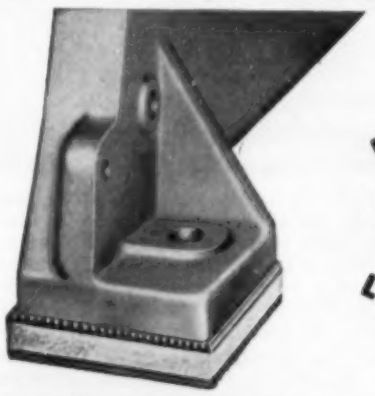
ROCKWELL CHART DRIVES are ruggedly built and are sealed for years of trouble-free service. The drives are adaptable to practically every type of instrument using circular charts. The price is $11.55 each. Turrets are $3.85 each F.O.B. Los Angeles Calif. or Tulsa, Oklahoma.

AMERICAN RECORDING CHART CO.
3113 E. 11th St. • Los Angeles 23, Calif.

SEND FOR DRIVE AND CHART BULLETIN

If you write maker identify as IEN - 5664

It's SIMPLE To Control VIBRATION and NOISE with Elasto-Rib...



NO BOLTING
NO CEMENTING
LOW COST

Elasto-Rib effectively stops transmission of vibration and noise by utilizing the elastic and damping properties of both cork and rubber.

It is fast and easy to install. For most machine applications, no bolts, lag screws or cement are required. Sheets 24" x 36" can be sawed or cut to size as needed.

New, illustrated booklet tells all about Elasto-Rib and how to install it. Ask for ER-701 and free sample.

THE **KORFUND** COMPANY, INC.

KORFUND VIBRATION CONTROL — SPRINGS — RUBBER — CORK

48-35 E. Thirty Second Place, Long Island City 1, N. Y.
In Canada: 510 Canal Bank, Ville St. Pierre, Montreal

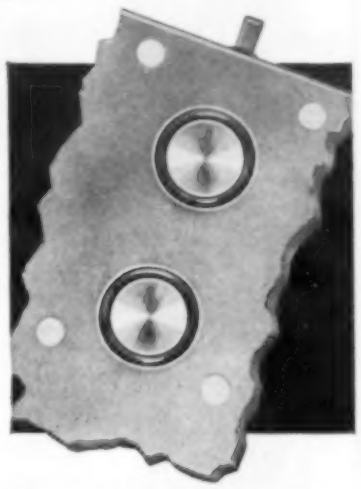
If you write maker identify as IEN - 5665

New HARTWELL

Push Button

Trigger Action

FLUSH LATCH



MODEL H-2

• A new latch development for modern equipment. Combines the desirable features of push button operation with the positive simplicity of trigger action in a small, rugged, lightweight yet inexpensive flush latch.

Available in many offset combinations for various door and frame thickness arrangements. Standard with or without gaskets in stainless steel or cadmium plated cold rolled steel.

Write for new 1954 Flush Latch Catalog

HARTWELL COMPANY | *Manufacturer of Flush Latches and Hinges, Fittings and Cable Terminals*
9035 Venice Blvd., Los Angeles 34, Calif.

If you write maker identify as IEN - 5666

SIMPLICITY AND INGENUITY have made

American STORAGE RACKS

First Choice

here's an exclusive American feature

American Tubular Storage Racks are designed to meet practically every storage need. They are used in every type of business, large and small. Get the facts on American Racks before you decide on any type rack. Send for catalogue.

AMONG AMERICAN USERS ARE:

Atomic Energy Commission	I. B. M.
Aluminum Co. of America	Parke-Davis Co.
General Electric Co.	S. S. Kresge Co.
General Motors Corp.	Western Electric Co.

Send for Catalogue

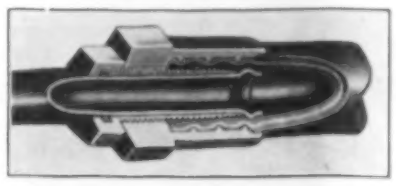
AMERICAN METAL PRODUCTS CO.

STORAGE RACK DIVISION
5959 Linsdale • Detroit 4, Michigan

If you write maker identify as IEN - 5668

HOSE FITTINGS . . Coupling, connects hose to tube, 1/4 to 2 inches

Source: MAEWARD COUPLINGS INC. Dept. IEN, Olivet, Mich.



Reusable

A hose end is squared and entered to butt against a shoulder in the outer portion of this new Stemlok hydraulic hose coupling. A metal tube is passed through the inner portion and then is beaded near its outer end. When the two coupling parts are threaded together, a leak tight joint is formed between the hose and the tube. At the same time, leakage along the tube is prevented by an O-ring in the head of the inner portion. The tube can be rotated for positioning after the coupling has been assembled. The connection develops strength equivalent to or in excess of the hose.

If you write maker identify as IEN - 5669

TIMING . . Interval counter, motor driven, seconds or minutes

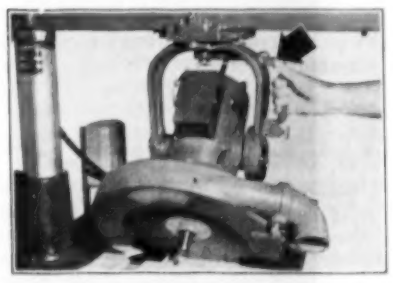
Source: PRECISION SCIENTIFIC CO. 3737 W. Cortland St., Dept. IEN, Chicago 47, Ill.

Bulletin 646

The operator of this new design of the company's Time-It interval counter presses a button at the front of the housing to start a counting cycle. He presses it again at the end of the cycle and notes its duration on the counting wheels. The unit represents recent improvement over the model previously described IEN-6696-41. It is available to register to 999.99 min. in 0.01-min. intervals or to 999.99 sec. in 0.1 sec. intervals. Assembly is in an enameled housing. The counter is reset to zero by operating a knob on the left hand side.

If you write maker identify as IEN - 5670

Locking action stops the movement of the carriage on the arm of the DeWalt radial machine when operator releases a thumb plunger shown in the illustration. The locking mechanism is available as optional equipment on the Model GA, GE and GW machines. It must be held in released position and so acts as a safety device in the event of an emergency or in case the operator's attention is distracted from his work. DeWalt, Inc., 63 Fountain Ave., Dept. IEN, Lancaster, Pa., can supply the equipment.



All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5671

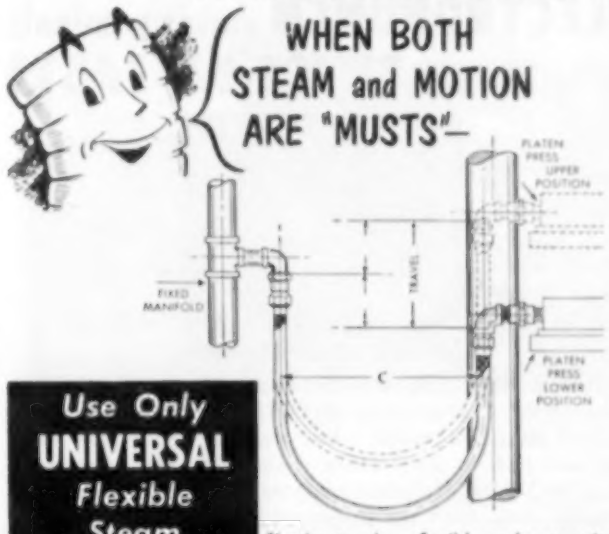
MAXIM SNOW THROWERS

never take a vacation

In winter, the most efficient and economical snow removal ever devised . . . in summer, spring, and fall the Maxim Snow Thrower's 7½ horsepower can be put to work with convenient attachments for mowing, rolling, grading and hauling. Conversion is quick and easy. For details on how the Maxim Snow Thrower works for you the whole year 'round, write Dept. TW.

THE MAXIM SILENCER COMPANY
71 HOMESTEAD AVENUE • HARTFORD 1, CONN.

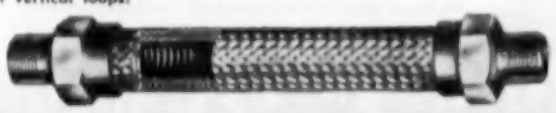
If you write maker identify as IEN - 5672



Use Only UNIVERSAL Flexible Steam Connections

Write for Catalog U-111 and data sheet showing proved method for installing Universal Seamless Flexible Metal Hose in vertical loops.

They're tough — flexible and economical. Widely used for movable platen presses, tire molds, laundry pressing machines and similar equipment requiring flexing many times per hour. Available in lengths to your specifications and equipped with heat-proof male and union female connectors as required.



UNIVERSAL METAL HOSE CO.
2131 SOUTH KEDZIE AVENUE CHICAGO 23, ILLINOIS

If you write maker identify as IEN - 5673

production flows smoothly...

at top speed, at all times, yet free of rejects

Kester makes 62 different fluxes to meet any requirements. Why not write our Technical Department for full information?

KESTER SOLDERING FLUX

KESTER SOLDER COMPANY
4211 Wrightwood Ave., Chicago 39
Newark 5, N. J. • Brantford, Canada

KESTER SOLDER

If you write maker identify as IEN - 5674

WHEN ARE TWO HEADS BETTER THAN ONE?

FLAT SPRING STEEL is constantly being purchased for completely new end uses. In most of these new applications the desired results are achieved. If, however, the Flat Spring Steel does not perform as hoped, the steel used may be unsuitable for the job, or something may be askew in the material's application.

That's when two heads can be better than one! Roebling is just about the nation's largest producer of High Carbon Flat Spring Steel...and Roebling laboratories are always glad to cooperate with manufacturers, designers and engineers who have a problem child. Send details to Wire and Cold Rolled Products Div., John A. Roebling's Sons Corp., Trenton 2, N. J.

A subsidiary of The Colorado Fuel & Iron Corporation

ROEBLING

If you write maker identify as IEN - 5675

ELECTROPUNCH stakes terminals to insulators TWICE AS FAST!

In this strict quality control operation at Cambridge Thermionic Corporation, ELECTROPUNCH—the all-electric impact hammer—has slashed production time *and unit cost* in half! Main reason for the speed-up: ELECTROPUNCH delivers instant, controlled impacts at a faster rate than the equipment previously used, and without requiring time to build up pressure! ELECTROPUNCH also *reduced spoilage* resulting from staking these ceramic insulators at inadequate or excessive pressures.

Delivers impacts up to 10,000 lbs. — up to 125 blows per minute! Economical to buy, operate and maintain.

Write, or phone Bigelow 4-6370 for folder showing complete line of Black & Webster tools.

BLACK & WEBSTER, INC.

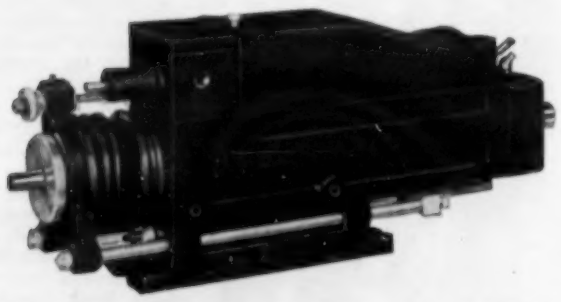
Dept. 17, 445 Watertown Street, Newton 58, Mass.
Solenoid-operated Production Tools

If you write maker identify as IEN - 5676

If you write maker identify as IEN - 5677

Bellows-Locke DRILL UNIT

Combines Hydraulic Feed
Air Powered Rapid Advance
Electrically Driven Spindle



Full 3" stroke—any part usable. Takes up to 5/16" drills. Either pulley driven or direct motor drive models available. Compact, streamlined, lightweight Can be mounted at any angle in any plane. Any number of units can be easily synchronized and interlocked for accurately timed sequence operation.

Write for Bulletin BL-5 Address Dept. IEN 554.

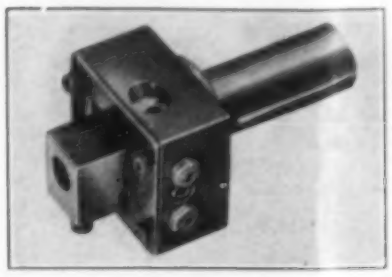
910A

The Bellows Co.
AKRON 9, OHIO
In Canada:
Pneumatic Devices of Canada, Ltd., Toronto, Ontario

If you write maker identify as IEN - 5678

BORING . . Adjustable head for screw machines, small turret lathes

Source: EVEREDE TOOL CO.
2000 N. Parkside Ave., Dept. IEN, Chicago 39, Ill.



Direct reading dial

The lead screw, for off-set positioning of the slide in this new No. 1-50 boring head, is set off-center to clear the opening through the center of the head so a boring bar can be positioned lengthwise in the adapter supplied for this purpose. Need for various lengths of bar is eliminated. Maximum off-set of the slide is 7/32 inch. Maximum bore is 1⅛ in. in diameter. Adjustment, for length, of the boring bar is ⅝ inch.

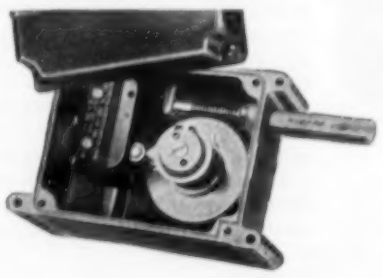
The head is equipped with a replaceable shank so it can be adapted quickly to various machines. Bars with preformed triangular bits clamped at their ends are available in a No. 1600 set in 3 and 3¼-in. lengths.

List price for the head with one shank is $57.50. A set of boring bars lists at $31.90. Additional straight shanks list at $5.75 each. Head dimensions are 1⅝ by 1⅝ by 1½ inch.

If you write maker identify as IEN - 5679

SWITCH . . Rotary limit unit operated by worm-driven gear and cams

Source: GEMCO ELECTRIC
25685 W. 8-Mile Road, Dept. IEN, Detroit 19, Mich.



Snap acting contacts

Two cams are assembled adjustably on the gear shaft of this new rotary limit switch. They operate two micro switches that provide one open and one closed circuit for each travel position. The mechanism is assembled in a gray molded Fibraloy fibreglass housing.

The switches rate 15 amp. on 110 to 440-volt ac., ½ amp. on 125-volt dc. Gear ratios can be supplied for given installation requirements. The worm is integral with a ½-in. hardened steel drive shaft for connection to the driving element where limit control is to be established. A ½-in. pipe threaded opening in the housing provides for wiring through a conduit. The shafts ride on Oilite bearings.

If you write maker identify as IEN - 5680

Big bags, to 14 ft. in length and about 1½ ft. in square cross section, are now being produced on a new paper bag machine in the plant of the Equitable Paper Bag Co., 45-50 Van Dam St., Dept. IEN, Long Island City 1, N. Y. The bags are available in various weights of paper in one or two plies, plain or color printed. Paper can be specified for protection against moisture.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5681

POWER PACKAGES

Model S-440 (illustrated) measures 12"x12"x24"; weighs 45 lbs. Contains air-operated pump, air muffler, air filter, air lubricator, air regulator, valves and gages and all necessary equipment for immediate operation.

Make just three connections and you are ready to boost 100 psi. plant supplied air pressure to 10,000 psi. fluid pressure for $278.25 (FOB Gardena, Calif.). Eight standard models for output fluid pressures of 1,000 to 30,000 psi. Special models for lower or higher pressures.

Applicable wherever low volume output at high pressures is the requirement. For oil or water service. Thousands in use. Send for bulletin No. 500.

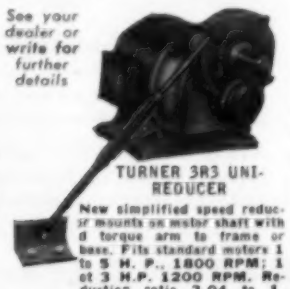
SPRAGUE
Engineering and Sales Corp.
1144 WEST 135TH ST., GARDENA, CALIF.

If you write maker identify as IEN - 5682

Sure! Turner can furnish ordinary 3 or 4 speed transmissions — BUT . . . Turner can ALSO furnish 6 or 9 speeds for AS LITTLE AS $10 to $20 ADDITIONAL . . .

Now, for slight added cost you can have 6 or 9 speeds at the "twist of a wrist." Models range from fractional to 60 H.P. Wide range of applications on machine tools as well as other equipment. Write for specification and descriptive catalog.

See your dealer or write for further details



TURNER 3R3 UNI-REDUCER

New simplified speed reducer mounts on motor shaft with a torque arm to frame or base. Fits standard motors 1 to 5 H. P., 1800 RPM; 1 at 3 H.P. 1200 RPM. Reduction ratio 3.04 to 1. Write for information.

TURNER UNI-DRIVE Company
3479 Terrace Street Kansas City 8, Missouri

If you write maker identify as IEN - 5683

R/M's BIG 7 Packing Types meet 95% of all packing needs

Rotary pumps like this one, which handles 10 gallons of highly viscous materials (10,000 SSU) per minute at 1200 rpm, give top performance with R/M No. 376, a packing included in Type 4 of R/M's Big 7 Packing Types.

Let R/M packings protect your machines

Increased machinery protection is one of the very real advantages you get when you standardize on R/M's Big 7 Packing Types. The reason is that they're engineered to give custom-built performance in all but the very rarest packing applications. You can also count on this basic line of just seven field-tested packings to lower your maintenance costs, cut your downtime, reduce your inventories, and simplify your ordering. The entire requirements of your plant can probably be met with just three or four of R/M's Big 7 Packing Types. For complete details, call in your R/M distributor.

R/M packings for maintenance purposes are sold only through authorized R/M distributors

R/M BIG 7 PACKINGS

RAYBESTOS-MANHATTAN, INC.
PACKING DIVISION, MANHEIM, PA.

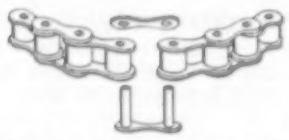
FACTORIES: Bridgeport, Conn.; Manheim, Pa.; No. Charleston, S.C.; Passaic, N.J.; Neenah, Wis.; Crawfordsville, Ind.; Peterborough, Ontario, Canada.

RAYBESTOS-MANHATTAN, INC., Packings • Asbestos Textiles • Industrial Rubber, Engineered Plastic, and Sintered Metal Products • Abrasive and Diamond Wheels Rubber Covered Equipment • Brake Linings • Brake Blocks • Clutch Facings • Fan Belts • Radiator Hose • Bowling Balls

If you write maker identify as IEN - 5685

New ROLLER CHAIN BREAKER

BREAK CHAIN IN SECONDS without damage to chain.



BREAKS ANY SIZE CHAIN No. 25 to No. 60.

BOSTON GEAR QUALITY THROUGHOUT Vital parts heat treated for wear-resistance and high strength.

AT YOUR BOSTON Gear DISTRIBUTOR Ask for new Chain Breaker folder. Explains simple operation.

Boston Gear Works, 63 Hayward St., Quincy 71, Mass.

BOSTON Gear
POWER TRANSMISSION PRODUCTS

If you write maker identify as IEN - 5686

Save Time...Labor...Material with BEVERLY metal cutting SHEARS

throatless SHEARS

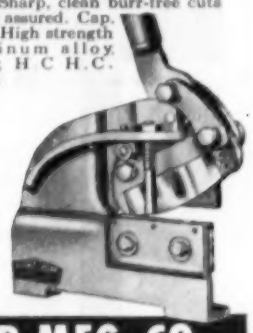
Make any cut—straight, irregular, curved. Exclusive design permits turning work any direction while cutting. 4 models—cap. to 3/16".

Inside SLOTTER

Makes cuts up to 8" inside edge of sheet. Sharp, clean burr-free cuts always assured. Cap. 16 ga. High strength aluminum alloy body; H C H.C. blades.

slitting SHEAR

New "SS" Series—easier cutting with compounded linkage. 3 models—cap. to 1/8"; trimming capacity to 1/2" mild.



See your Beverly Distributor. Write for FREE illustrated Bulletin.

Beverly SHEAR MFG. CO.
3012 W. 111th STREET • CHICAGO 43, ILLINOIS

If you write maker identify as IEN - 5687

DECKER INDUSTRIAL FASTENERS

SPEED WORK . . .
SAVE TIME AND $$$

Decker Industrial Fasteners work easy . . . hold fast and firm. Their dependability and on-the-job economies have made them a recognized industrial standard for over twenty-five years.

Whether you need cold-headed pipe plugs, clinch nuts, Weld-Nuts, hex type nuts or special fasteners, Decker is ready to serve you quickly and efficiently on any quantity . . . any type or size.

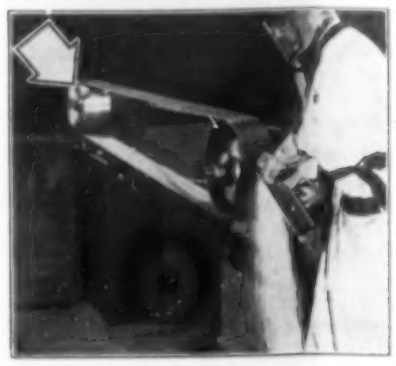
Get Decker's big illustrated Industrial Fastener catalog now. It's yours for the asking!

DECKER MANUFACTURING Company
ALBION • MICHIGAN

If you write maker identify as IEN - 5688

GRINDING . . Backstand idler applies abrasive belt on a grinder

Source: CARBORUNDUM COMPANY
1942 Buffalo Ave., Dept. IEN, Niagara Falls, N. Y.



Bulletin 1262

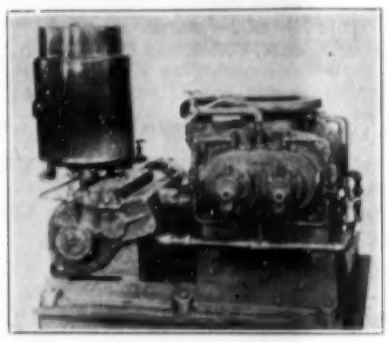
The idler pulley, in this new adjustable backstand, can be tilted below or above horizontal, to "track" the belt, by turning a knob on one of two controls at the operator's position in front of a grinding machine. The second control moves the idler assembly forward or back on the supporting stand to compensate for changing diameters of contact wheel on the grinder and for changing tension requirements. The stand is suited for belts ranging from ½ to 8 in. in width. The patented tracking device eliminates need for precise center alignment between idler pulley and the contact wheel.

Model 432, for floor stand operation as shown in the illustration, and Model 431, a smaller unit for floor, wall or bench installation, are available at list prices of $76 and $61. The price includes front tracking and tension controls. Each model is available as an individual unit or as a part of a complete backstand installation that includes the company's serrated "T61" contact wheel, previously described IEN-4746-52. Universal Backstand Idler "61" designates both models.

If you write maker identify as IEN - 5689

PUMP . . Positive rotary and single stage unit for vacuum duty

Source: KINNEY MFG. DIVISION
3564 Washington St., Dept. IEN, Boston 30, Mass.



No sealing fluid

Illustrated is new combination of the company's Model MB 1200 positive rotary pump and one of its single stage pumps for vacuum duty. The combination is capable of producing blank-off pressure of 0.1 micron. Pumping speed is about 750 cfm. at 1 micron and about 1,000 cfm. in a range from 10 microns to 1 mm. of mercury. At high vacuum the combined unit requires about 5 hp. and at an inlet pressure of 15 mm. it takes about 15 hp.

The positive pump is direct connected to a 10-hp. 1,800-rpm. motor and is equipped with a built-in by-pass valve. The single stage backing pump is driven by a 5-hp. 520-rpm. geared head motor. Assembly is on a common base. The rotary pump remains idle, with its by-pass open to the vacuum vessel, until the single stage backing pump roughs down from atmospheric pressure to a predetermined pressure such as 15 mm. At this point, the rotary pump is automatically cut in and further evacuation is performed by the combined unit.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5690

MAKE YOUR OWN TOUGH DRAWING-BOARD TEST!

Send for this FREE sample kit

GHOST-PROOF

ELLCO-VEL® TRACING PAPER

You can erase and erase this blue-tint as many as 5 or 6 times after repencilling. Pencil lines vanish completely and thoroughly. Not even the shadow of a ghost shows on white or blue prints. It's Ghost-Proof! But find out for yourself. Send for tough, durable ELLCO-VEL samples now.

B. K. ELLIOTT CO.
PITTSBURGH • DETROIT • CLEVELAND

WRITE DEPT. 51E • 126 SIXTH ST. • PITTSBURGH 22, PA.

If you write maker identify as IEN - 5691

ELIMINATES OIL MIST As Fire Hazard and Maintenance Problem!

Electro-Mist Electronic Oil Mist and Fume Precipitator. Capacity—700 cfm.

Fire hazards, costly maintenance, slippery floors—all are the result of oil mist "on the loose" from high-speed cutting and grinding operations. AAF's Electro-Mist electronic precipitator traps this mist, smoke and fumes right at the source—permits return of cleaned air to workroom and the collection of up to 10 gallons of oil per day for re-use.

Electro-Mist's compact design permits location close to operation, saving costly duct runs. Available in 700 cfm and 1500 cfm capacities. For complete information, write for Bulletin No. 251A.

AAF American Air Filter COMPANY, INC.
335 Central Avenue, Louisville 8, Kentucky
American Air Filter of Canada, Ltd., Montreal, P. Q.

If you write maker identify as IEN - 5692

Now FOR SMALL FLOW FILTRATION THE Delpark Junior

Write for DELPARK JUNIOR BULLETIN

Designed for coolant filtration on grinders, hobbers, shavers, cutters, hones and lappers with small coolant flows. Filtration capacity on cutting oils ¼ to 1 g.p.m., soluble oils ½ to 1½ g.p.m.

Permits closer tolerance and finish requirements, greater machine efficiency and production, fewer rejects. Assures longer wheel and tool life, lowers coolant temperature. Requires no floor space. Disposable filter tray replaced in seconds. Allows cleaner working conditions.

INDUSTRIAL FILTRATION COMPANY
95 INDUSTRIAL AVE. LEBANON, INDIANA

If you write maker identify as IEN - 5693

ROCKWOOD SpotPROTECTION SYSTEMS USED FOR SMALL-AREA FIRE HAZARDS

Compact custom-engineered Rockwood SpotPROTECTION Systems are excellent for small-area, though potentially dangerous, hazards like the tank truck loading platform above. Such hazards get on-the-spot fire-choking action when these systems are installed.

Systems handle Rockwood WaterFOG, FogFOAM, FOAM or "WET". Automatic or manual operation. Three sizes: 2, 4 or 6 Heads. Special Systems also available for use with Rockwood FOAM Maker Chambers.

Systems easily replenished with FOAM or "WET", each available in 5-gallon cans or 50-gallon drums.

Write for Rockwood SpotPROTECTION System engineering data sheet to see type of information needed for these carefully engineered Systems.

ROCKWOOD SPRINKLER COMPANY
Engineers Water . . . to Cut Fire Losses
40 HARLOW STREET, WORCESTER, MASS.

If you write maker identify as **IEN - 5694**

you can get in FAFNIR Ball Bearings this small

• For extremely small shafts in instruments, home appliances, cameras and projectors, fractional h.p. motors, Fafnir makes several series of extra small ball bearings . . . in metric bore sizes down to 4 mm and in inch sizes down to ⅛". Available with standard, special or super-precision tolerances. Three constructions . . . filling slot, non-filling or spring type retainers. Can be fitted with grease shields, felt seals, Mechani-Seals or Plya-Seals. If you want top performance on a small shaft — Fafnir has the answer. Write for new Instrument Bearing Catalog. The Fafnir Bearing Company, New Britain, Conn.

FAFNIR
BALL BEARINGS
MOST COMPLETE LINE IN AMERICA

If you write maker identify as **IEN - 5695**

VULCAN
ELECTRIC HEATING UNITS

Strip Heaters

For Heating
Flat Surfaces • Shallow Pans
Hot Plates • Ovens Platens
Dies • Plastic Extruders • Melting
Pots • Tanks • Package Sealers, etc.

RUGGED CONSTRUCTION

Rust-resisting sheath is of one-piece rectangular tubing, specially drawn to our specifications.

Heater coil, of nickel chromium wire, is insulated from the inner sheath wall with a refractory selected for best Terminal conduction and stability at elevated temperatures. Terminal screws are stainless steel, to ensure strength and avoid oxidation.

115 and 230 volts. Five terminal arrangements

Steel sheath (150 to 1250 watts) for temperatures up to 750° F max. High temperature sheath (250 to 1500 watts) for temperatures up to 1200° F max.

VULCAN ELECTRIC COMPANY
DANVERS 8, MASS.

By the makers of Vulcan Electric Heating Units, Soldering Tools, Solder Pots, Glue Pots, Branding Irons and Electric Heating Devices.

If you write maker identify as **IEN - 5696**

COMBAT CORROSION!

Specify

TAPECOAT®

. . . the Coal Tar Protection in Tape Form for Pipe, Pipe Joints, Couplings, Tanks, etc.

TAPECOAT is a quality coal tar protective coating equivalent in effectiveness to a hot applied coal tar pipe line coating.

TAPECOAT resists moisture, acids, alkalis, soil stress, electrolysis, chemical fumes, fly ash, salt water, salt-laden air, barnacles and other severe corrosive and abrasive conditions above or below ground. Cuts maintenance and replacement costs. TAPECOAT is self-bonding and requires no foreign adhesives. Proved in service since 1941.

Sizes: Rolls of 2", 3", 4", 6", 18" and 24" widths. Write for details and prices.

The TAPECOAT Company
Originators of Coal Tar Tape Protection
1553 Lyons Street, Evanston, Illinois

NEW LITERATURE

If you write maker identify as **IEN - 0416**

ABRASIVES . . Metallic shot and grit for blast cleaning and shot peening. How to select for the desired purpose is detailed in 16-page Catalog 1153. Cleveland Metal Abrasive Co., 887 E. 67th St., Dept. IEN, Cleveland 8, Ohio

If you write maker identify as **IEN - 0417**

BEARINGS . . Thinwall nylon bearings with steel backing are subject of 4-page "Bearing Application Evaluation Chart", initially intended for company's own salesmen, which lists 17 service requirements for bearing suitability check. Thomson Industries Inc., 1029 Plandome, Dept. IEN, Manhasset, N. Y.

If you write maker identify as **IEN - 0418**

BOILERS . . Package-type automatic steam generator in sizes from 20 to 500 hp. is oil or gas fired to meet requirements, 15 to 200 lb. pressure. Bulletin BE-3, 6 pages. Boiler Engineering & Supply Co., Dept. IEN, Phoenixville, Pa.

If you write maker identify as **IEN - 0419**

BUILDINGS . . Insulated metal wall panels in a range of standard designs assemble into industrial buildings. Bulletin B-54-B, 12 pages, shows construction features. R. C. Mahon Co., Box 4666, Dept. IEN, Detroit 34, Mich.

If you write maker identify as **IEN - 0420**

BUILDINGS . . Information booklet on windows describes common sash troubles, includes a variety of maintenance suggestions, stresses importance of proper caulking, glazing, painting. "Sash Maintenance," 16 pages. Tremco Mfg. Co., 8701 Kinsman Road, Dept. IEN, Cleveland 4, Ohio

If you write maker identify as **IEN - 0421**

GAS BURNERS . . Company offers a line that ranges from types for coffee urns to locomotive boilers, together with controls and accessories. "Cold Facts", 4 pages. W. H. Stewart Co., 420 E. Grand Ave., Dept. IEN, Oklahoma City, Okla.

If you write maker identify as **IEN - 0422**

CAPACITORS . . Tubular oil-filled units, 600 to 1,500 working volts dc., 0.5 to 8 mfd., threaded mounting necks. Catalog 1134, 4 pages, describes them. Industrial Condenser Corp., 3243 N. California Ave., Dept. IEN, Chicago 18, Ill.

If you write maker identify as **IEN - 0423**

CASTERS . . Floating-hub design employs a spiral spring between the mounting bolt and the wheel. A roller bearing supports the wheel on the outside of this floating hub. Construction cushions shocks, provides resilient mounting, rates 50 to 25,000 pounds. Catalog FH-53, 24 pages. Bassick Co., 439 Howard Ave., Dept. IEN, Bridgeport 2, Conn.

If you write maker identify as **IEN - 0424**

CLAMPS . . Forged-steel and malleable-iron C-clamps, spring clamps, welder's clamps, bar clamps, hand screws. "Hargrave Catalog C-50", 16 pages. Cincinnati Tool Co., 1953 Waverly Ave., Dept. IEN, Cincinnati 12, Ohio

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 5697**

NEW COMPACT POWERFUL

Quiet!

ELECTRIC VIBRATOR

To speed the flow of stubborn material from hoppers, bins and chutes of all sizes and shapes.

Obtainable in all voltage, phase and cycle requirements.

Write today for complete literature.

THE CLEVELAND VIBRATOR CO.
2736 Clinton Avenue • Cleveland 13, Ohio

If you write maker identify as **IEN - 0425**

ELECTRICAL CONTACTS . . Selector guide is a feature of new 60-page "Contact Catalog". It lists copper, silver, tungsten, molybdenum, palladium, platinum, other contact materials, gives applications and advantages, describes assemblies and selections. P. R. Mallory & Co., 3029 E. Washington St., Dept. IEN, Indianapolis 6, Ind.

If you write maker identify as **IEN - 0426**

BLAST CLEANING . . Catalog on accessories such as hose, nozzles, helmets, clothing, abrasive shot and grit features information on selection. Bulletin 300-C, 28 pages. Pangborn Corp., 230 Pangborn Blvd., Dept. IEN, Hagerstown, Md.

If you write maker identify as **IEN - 0427**

MAGNETIC CLUTCHES . . Single and multiple-disc designs from .4 to 9,000 lb. ft., also combination clutch-brakes, disc brakes. Bulletin 226-C, 8 pages. Stearns Magnetic Inc., 626 S. 28th St., Dept. IEN, Milwaukee 46, Wis.

If you write maker identify as **IEN - 0428**

POSITION CONTROLS . . Servo motors and tachometer generators designed to operate under extreme conditions. Standard units in 4-page Catalog 4. G-M Laboratories Inc., 4300 N. Knox Ave., Dept. IEN, Chicago 41, Ill.

If you write maker identify as **IEN - 0429**

CHAIN CONVEYORS . . Picture book of 44 pages shows use in saw mills, pulp mills, hardboard and plywood plants of chain conveyors, belt conveyors, spray nozzles. Bulletin 53-54, "For the Forest Products Industry". Chain Belt Co., 4703 W. Greenfield Ave., Dept. IEN, Milwaukee 1, Wis.

If you write maker identify as **IEN - 5698**

HERE'S HOW TO . . . CUT COSTS

. . . IMPROVE YOUR LIQUID HANDLING METHODS NOW

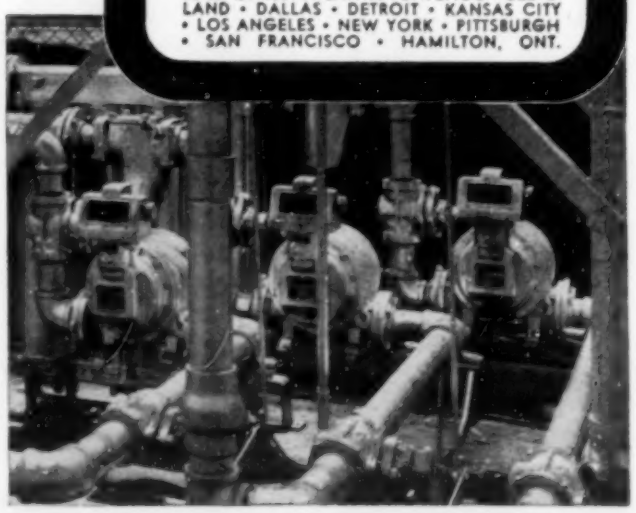
Install Bowser XACTO, the world's most widely used meter. Accurate metering saves money . . . improves uniformity and quality of your products, too!

Industries of all kinds are now using Bowser XACTO meters as their most effective way for checking incoming deliveries, transferring, batching or recording consumption.

It will pay you to write direct or consult your nearby Bowser representative.

BOWSER

BOWSER, INC.
1338 Creighton Ave., Fort Wayne 2, Ind.
Sales Offices—ATLANTA • CHICAGO • CLEVELAND • DALLAS • DETROIT • KANSAS CITY • LOS ANGELES • NEW YORK • PITTSBURGH • SAN FRANCISCO • HAMILTON, ONT.



If you write maker identify as **IEN - 0430**

CORROSION PROOFING . . Synthetic-resin bonding cement for brick and tile withstands acids, alkalis, solvents, hot water, live steam. Application instructions and resistance chart in 4-page bulletin, "Corobond". Ceilcote Co., 4840 Ridge Road, Dept. IEN, Cleveland 9, Ohio

If you write maker identify as **IEN - 0431**

CORROSION PROOFING . . Acid and alkali-proof cements, linings and coatings employ ceramics, plastics, rubbers, glass, asphalt, sulphur, depending on service. Bulletin G-53, 8 pages, reviews them. Electro Chemical Engineering & Mfg. Co., 750 Broad St., Dept. IEN, Emmaus, Pa.

If you write maker identify as **IEN - 0432**

COUNTING . . Numerical indicator for process and test variables, particularly those that change rapidly, operates with a variety of sensing devices from thermocouples to load cells. "Miniature Numerical Indicator", 4 pages. Streeter-Amet Co., 4101 Ravenswood Ave., Dept. IEN, Chicago 13, Ill.

If you write maker identify as **IEN - 0433**

PNEUMATIC CYLINDERS . . Eight sizes from 1½ to 6 in. in bore and in a variety of mountings are rated at 200 lb. They are for use in automatic equipment. Bulletin, "Heavy Duty", has a table of pressure, force and volume data. Petch Mfg. Co., 463 York, Dept. IEN, Detroit 2, Mich.

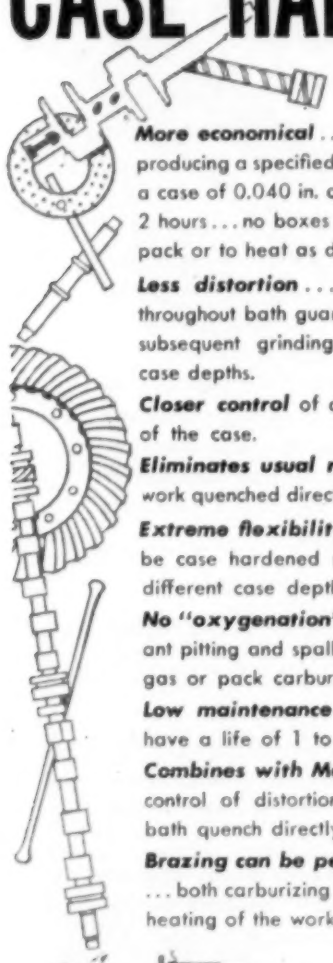
If you write maker identify as **IEN - 0434**

DRAFTING . . Letter-size samples of tracing paper are provided for you to test pencil, erasure and handling ability of the company's Ellco-Vel blue-tint vellum. Ask for the new 4-page "Sample Folder." B. K. Elliott Co., 126 Sixth St., Dept. IEN, Pittsburgh 22, Pa.

If you write maker identify as **IEN - 5700**

Cut costs with faster

CASE HARDENING



More economical ... is the fastest method of producing a specified case depth—for example, a case of 0.040 in. can readily be produced in 2 hours ... no boxes or retorts to pack and unpack or to heat as dead loads.

Less distortion ... temperature uniformity throughout bath guaranteed within 5° F. ... less subsequent grinding ... permits more shallow case depths.

Closer control of depth and other properties of the case.

Eliminates usual reheating operation ... work quenched directly from carburizing bath.

Extreme flexibility ... several batches may be case hardened simultaneously—each to a different case depth.

No "oxygenation" of the case, with attendant pitting and spalling, as frequently occurs in gas or pack carburizing.

Low maintenance costs ... plain steel pots have a life of 1 to 3 years.

Combines with Martempering ... for best control of distortion ... by an isothermal salt bath quench directly after carburizing.

Brazing can be performed simultaneously ... both carburizing and brazing done with one heating of the work. Brazing cost—nothing.

390 LBS. OF WORK AN HOUR

... from an Ajax furnace no larger than your desk!

180 lbs. of metal body screws per charge are given case depths ranging from 0.004" to 0.010" as required.

AJAX ELECTRIC COMPANY

The world's largest manufacturer of electric heat treating furnaces exclusively

900 Frankford Avenue
Philadelphia 23, Penna.

Trade Mark

AJAX HULTGREN

ELECTRIC SALT BATH FURNACES

NEW LITERATURE—*Continued*

If you write maker identify as **IEN - 0435**

DRILLING . . Power tools for metal working include drill presses, abrasive saws, grinding machines, shapers, welders. Summary in folder AD-831, 8 pages. Rockwell Mfg., 624 N. Lexington Ave., Dept. IEN, Pittsburgh 21, Pa.

If you write maker identify as **IEN - 0436**

DRIVE BELTS . . Grommet design of the company's V-belt employs two loops or grommets of rayon cord embedded in rubber for a strong stretch-resistant construction. Selection instructions and tables in 8-page Bulletin 2170. B. F. Goodrich Co., 450 S. Main St., Dept. IEN, Akron 11, Ohio

If you write maker identify as **IEN - 0437**

DRIVE BELTS . . New method of calculating hp. capacity of a Texrope V-belt is described in 6-page Bulletin 20-B-6956B with instructions, eight selection and factor tables, sizes and general information. Allis-Chalmers Mfg. Co., 900 S. 70th St., Dept. IEN, Milwaukee 14, Wis.

If you write maker identify as **IEN - 0438**

CHAIN DRIVES . . Stock combinations of silent chain and sprockets are listed in 20-page Catalog 154 with list prices, selection instructions, 1 to 50 hp. ratings. Ramsey Chain Co., 5153 Broadway, Dept. IEN, Albany 4, N. Y.

If you write maker identify as **IEN - 0439**

DRYING . . Radiant-heat drying and curing of synthetic textile finishes is the subject of new 22-page "Textile Report". It tells purpose of the finishes, how they are cured, installation data on the company's Far-Infrared electric radiant elements. Edwin L. Wiegand Co., 7505 Thomas Blvd., Dept. IEN, Pittsburgh 8, Pa.

If you write maker identify as **IEN - 0440**

ELECTRIC DUCT . . Trolleys pick up current from bus-bar conductors to power cranes, hoists and other moving equipment to 500 amperes. Pictures in 44-page Bulletin 35 show steps in its installation procedure along with components. Feedrail Corp., 125 Barclay St., Dept. IEN, New York 7, N. Y.

If you write maker identify as **IEN - 0441**

DUST COLLECTING . . How four paint manufacturers use Dustube equipment for local exhaust ventilation is described in 4-page Bulletin 422. American Wheelabrator & Equipment Corp., 1119 S. Byrkit St., Dept. IEN, Mishawaka, Ind.

If you write maker identify as **IEN - 0442**

ELECTRICAL PRODUCTS . . 196-page Catalog 54 on electric meters, pyrometers, test instruments, timers, counters, heaters, switches, relays, solenoid valves, connectors, by a number of manufacturers. Electro-Tech Equipment Co., 308 Canal St., Dept. IEN, New York 13, N. Y.

If you write maker identify as **IEN - 0443**

ELEVATORS . . Portelvator adjusts to the height you want by means of a hand crank and a screw at each corner of its rectangular top. Four sizes rate 1,000 to 5,000 lb. Bulletin P-54, 4 pages, suggests uses. Hamilton Tool Co., 905 Hamilton St., Dept. IEN, Hamilton, Ohio

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 5702**

NEW! *Greater Capacity! Smaller Size! Longer Life!*

A revolutionary development in industrial gearing! Foote Bros. applies its aircraft quality gear manufacturing experience to its industrial gear production...to give you greater capacity and longer life in less space!

FOOTE BROS. *Duti-Rated* LIFETIME GEARING

Want to learn how these better gears will work in your product? Write today for complete details!

FOOTE BROS. GEAR AND MACHINE CORPORATION
4545 S. Western Boulevard, Dept. AD, Chicago 9, Illinois

FOOTE BROS.
Better Power Transmission Through Better Gears

If you write maker identify as **IEN - 5703**

SAVE TIME · STEPS · MATERIALS with the HANSEN TACKER (ONE HAND)

ENGINEERED FOR SERVICE

FASTER! With its zip-zip compound leverage action, Hansen saves time in all types of tacking and fastening. Fast, easy one-hand operation. Tacks fast as you grip. Leaves one hand free.

BETTER! Balanced design insures accurate, precision driving. Powerful action drives each staple firmly and neatly in place for improved quality and increased holding power. It is adaptable to a wide variety of uses — screens, insulation, TV wires, etc.

AT LESS COST! Hansen saves *time, steps, and materials* — operates faster — saves back-tracking — ready for instant, continual use.

USE HANSEN VEST-KIT FOR A READY SUPPLY OF STAPLES — as near as the vest pocket. No back-tracking. No delays. Insist on Hansen Staples in the BLUE BOX. Staples in 80 sizes.

A. L. HANSEN MFG. CO. Request Booklet ...TODAY

5051 RAVENSWOOD AVE., CHICAGO 40, ILL.

If you write maker identify as **IEN - 5704**

Graybar ELECTRICIANS' TOOL CATALOG

This is it ... one of the most comprehensive electricians' tool catalogs ever published. 64 pages covering prices, specifications and ordering information on hand tools, motor-driven tools, and miscellaneous supplies for every electrical construction or maintenance need. Be sure to get your copy — find out for yourself how a single source for tools saves you time and purchasing paperwork.

And, for other electrical requirements, too, just contact your local Graybar Representative — he can furnish prompt information on any of the more than 100,000 electrical items we distribute. *Graybar Electric Co., Inc., 420 Lexington Ave., New York 17, N. Y.*

Call Graybar *first* for . . . Everything Electrical GraybaR Electric Company

431-125

If you write maker identify as **IEN - 5705**

THIS light-weight **HEAVY-DUTY MAGCOA DOCKBOARD IS**

A BETTER INVESTMENT–*here's why*

There are three reasons why this is the perfect Dockboard for *this* installation. (1) It is the exact length required for this car-to-dock span, with proper allowance for car width variations. (2) The dock end of the board is flared just enough for use on *this* narrow dock, permits part of the turn to be made while the truck is on the board. (3) It is built for weight requirements of *this* company's handling equipment and loads, with a margin of safety to spare.

Your dock is different and your local Magcoa Representative knows it. He's a loading dock expert—thorough and quick in fitting a Magcoa Dockboard to your specific needs. Then mass-production specialists at the Magcoa factory take over. Result: a light-weight HEAVY-DUTY Dockboard that solves your specific problems, quickly ... and permanently.

Safety, Service, Facts—Quarter-round safety curbs, one-piece hand holds and the other Magcoa safety and efficiency features make your Dockboard safe, permanent equipment. You get Magcoa Service, too, if abuse or misuse puts your Dockboard out of operation. Our free new **Facts File** gives you all the facts. It's yours for the asking.

MAGNESIUM COMPANY OF AMERICA
MATERIALS HANDLING DIV. • EAST CHICAGO 14, IND.

If you write maker identify as IEN - 5706

NO GUESS-WORK WHEN YOU SEE THIS MARK

Engineers and designers know they can depend on Curtis Joints — because catalogue torque and load ratings are substantiated by constant tests under actual working conditions.

Curtis quality control, precise design and careful manufacture from specially selected steels insure long life, efficient trouble-free performance.

CURTIS UNIVERSAL JOINTS

- 14 sizes always in stock — bored or unbored hubs
- Fewer parts, simpler construction
- Complete equipment for government tests

PLUS — facilities and engineering skill to handle special specification jobs at any time.

Not sold through distributors. Write direct for free engineering data and price list.

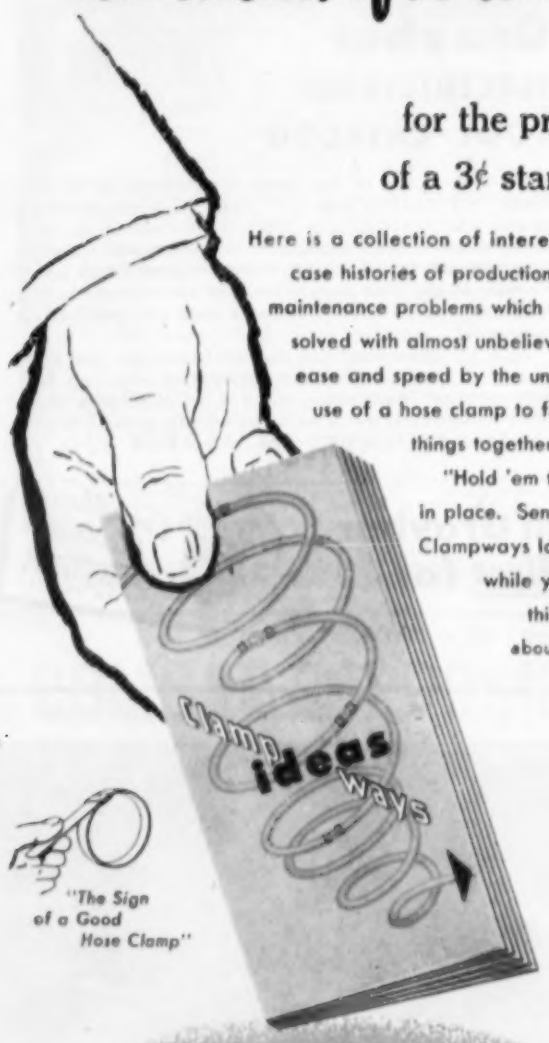
Trade Mark CURTIS UNIVERSAL JOINT CO., INC.
7 BIRNIE AVE., SPRINGFIELD, MASS.
As near to you as your telephone
A MANUFACTURER OF UNIVERSAL JOINTS SINCE 1919

If you write maker identify as IEN - 5707

ideas...worth

hundreds of dollars

for the price of a 3¢ stamp



Here is a collection of interesting case histories of production and maintenance problems which were solved with almost unbelievable ease and speed by the unusual use of a hose clamp to fasten things together and "Hold 'em tight" in place. Send for Clampways Ideas" while you're thinking about it*.

"The Sign of a Good Hose Clamp"

PUNCH-LOK Company

* or get your copy from your near-by Punch-Lok distributor

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City_____ State_____

4962

NEW LITERATURE—Continued

If you write maker identify as IEN - 0444

EXTRUDING . . Machine extrudes teflon plastic around an electric conductor for insulation. Instructions on installation, loading the machine, starting, operating, are in 6-page Bulletin TE-1. Jennings Engineering Inc., 3457 Chestnut St., Dept. IEN, Philadelphia 4, Pa.

If you write maker identify as IEN - 0445

FASTENINGS . . Machine screws and nuts in steel and brass from No. 2-64 to 1/2-13, also stove bolts from ⅛ to ½ inch. Price List, 4 pages. Gemco Fasteners, 1162 Stuyvesant Ave., Dept. IEN, Irvington, N. J.

If you write maker identify as IEN - 0446

FASTENINGS . . Alloy steel screws in socket-head, square, slotted, headless types and pipe plugs. Catalog 50 gives 36 pages of dimensions and list prices. Mac-It Screw Div., Strong, Carlisle & Hammond Co., 1392 W. 3rd St., Dept. IEN, Cleveland 13, Ohio

If you write maker identify as IEN - 0447

FASTENINGS . . Expansion-bolt Selector Chart describes types of bolt anchors, tells how to pick them by type of load, masonry class, safe working load, metal. U. S. Expansion Bolt Co., 604 State St., Dept. IEN, York, Pa.

If you write maker identify as IEN - 0448

FLOORS . . Cardboard selector has a dial which you turn to floor type such as concrete, terrazzo, wood, linoleum, asphalt tile, rubber tile. It then indicates what materials are available and how to use them. Ask for "Florule", 4 by 6 inches. Multi-Clean Products Inc., 2277 Ford Parkway, Dept. IEN, St. Paul 1, Minn.

If you write maker identify as IEN - 0449

FLOORS . . Line of materials includes resurfacer, hardener, patching, along with roof resurfacer, sealing material for seeping walls. Folder M-254, 6 pages. Stonhard Co., 1306 Spring Garden, Dept. IEN, Philadelphia 23, Pa.

If you write maker identify as IEN - 0450

FORGINGS . . Shafts, gear blanks, rings, heavy bolts and other parts are forged, bent, upset, threaded and machined to specification. "Forgings", 4 pages. American Forge & Mfg. Co., 818 Shore Ave., Dept. IEN, Pittsburgh 12, Pa.

If you write maker identify as IEN - 0451

FURNITURE . . Folding tables and benches provide decentralized lunchroom facilities when needed, are movable out of the way when the lunch period is over. Pocket bulletin, "Just the Thing for Lunch," 8 pages. Schieber Sales Co., 12955 Inkster Road, Dept. IEN, Detroit 23, Mich.

If you write maker identify as IEN - 0452

LIQUID LEVEL GAGES . . Models for chemical process use are made in five groups for test pressures to 20,000 lb. Four-page Bulletin 218 shows them. Jerguson Gage & Valve Co., 80 Fellsway, Dept. IEN, Somerville 45, Mass.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5709

REED TRADEMARK

GENUINE
SELF-FEEDING RATCHET REAMER
Saves Time, Money and Effort

Users find that the Genuine REED self-feeding Ratchet Reamer saves as much as two-thirds of the time and effort required by other similar-purpose tools. Spiral flutes with patented controlled-depth cutting edges actually CUT burr with NO pushing effort. Double pawl ratchet cuts lost motion in half. Capacity to 2". Ask your supplier or write for free literature.

In a Vise or Pipe Tool, If it's a REED . . . it's RIGHT!

REED MANUFACTURING COMPANY
ERIE, PENNSYLVANIA, U.S.A.

If you write maker identify as IEN - 0453

LIQUID LEVEL GAGE . . Remote indicator for boiler water level and level in tanks or other vessels operates on a differential-pressure arrangement. Sketches show typical uses in 20-page Bulletin WG-1824-53. Yarnall-Waring Co., 122 Mermaid Lane, Dept. IEN, Philadelphia 18, Pa.

If you write maker identify as IEN - 0454

SURFACE ROUGHNESS GAGE . . Profilometer is a shop instrument to measure surface roughness in millionths of an inch. What it can do and an offer of a demonstration in your shop are described in 8-page Form LT-90. Micrometrical Mfg. Co., 345 S. Main St., Dept. IEN, Ann Arbor, Mich.

If you write maker identify as IEN - 0455

THREAD GAGE . . Rotochek is an electrically-driven gage to check internal threads by power instead of manual rotation. It handles ⅜ to ¾-in. threads. Catalog 612, 4 pages, shows bench and flexible-shaft models. Taft-Peirce Mfg. Co., 32 Mechanic Ave., Dept. IEN, Woonsocket, R. I.

If you write maker identify as IEN - 0456

GEARS . . "Hob List", 56 pages, classifies available gear-cutting tools by size to assist you in selecting gears that can be made without tool charge. They include hobs, cutters, broaches, herringbone cutters. Brad Foote Gear Works, 1309 S. Cicero Ave., Dept. IEN, Cicero 50, Ill.

If you write maker identify as IEN - 0457

CYLINDRICAL GRINDING . . Information booklet describes common grinding troubles and how to correct them, operating and maintenance suggestions, selection of grinding wheels, use of coolant. "Cylindrical Grinding Handbook", 36 pages. Landis Tool Co., 26 E. 6th, Dept. IEN, Waynesboro, Pa.

If you write maker identify as IEN - 5710

Reduce Lost Man Hours

"Kerodex" Gives New and Improved Barrier Protection Against Contact Dermatitis

"Kerodex" is a new and improved barrier cream which offers maximum protection against hundreds of primary irritants and sensitizing agents encountered in industry. It provides an effective protective coating which is invisible yet strong and as elastic as the skin itself. It protects against initial contact. It prevents the recurrence of a dermatitis after recovery.

Special Advantages

"Kerodex" offers practical and effective protection *before* the damage is done. It is nonirritating and nonsensitizing. It may be applied with equal safety to the face, hands or any other area of the skin, keeping pores and follicles free from foreign matter.

"Kerodex" does not smear. It does not affect materials handled, nor is it affected by them. It is easy to apply, economical and highly acceptable to the user.

"Kerodex" provides a vital safety measure for the maintenance of high production levels.

Maximum Protection

"Kerodex®" is supplied in two types, and a series of creams are available to protect against: *water-soluble* irritants such as acids, alkalis, soaps, detergents, and water-insoluble irritants such as paints, enamels, cleaning fluids.

Write for Information

We'll be happy to send you complete descriptive literature, or to have our representative call at your convenience.

Ayerst Laboratories, 22 East 40th Street, New York 16, N. Y.

If you write maker identify as **IEN - 0458**

GRINDING STONES . . Some 500 shapes, sizes and varieties of sharpening stones for edged tools such as knives, cutters, axes, specials. Catalog 54, 28 pages. Behr-Manning Corp., Box 808, Dept. IEN, Troy, N. Y.

If you write maker identify as **IEN - 0459**

GRINDING TOOLS . . 76-page Catalog 61 on air tools presents portable grinders, sanders, rotary files, drills, screwdrivers, nut setters, impact wrenches, hoists, along with a variety of accessories and adapters. Aro Equipment Corp., 109 Madison St., Dept. IEN, Bryan, Ohio

If you write maker identify as **IEN - 0460**

GRINDING WHEELS . . 60-page Catalog gives size and list price information on wheels with vitrified and resinoid bonds, also mounted wheels, Flex wheels. Chicago Wheel & Mfg. Co., 1101 W. Monroe St., Dept. IEN, Chicago 7, Ill.

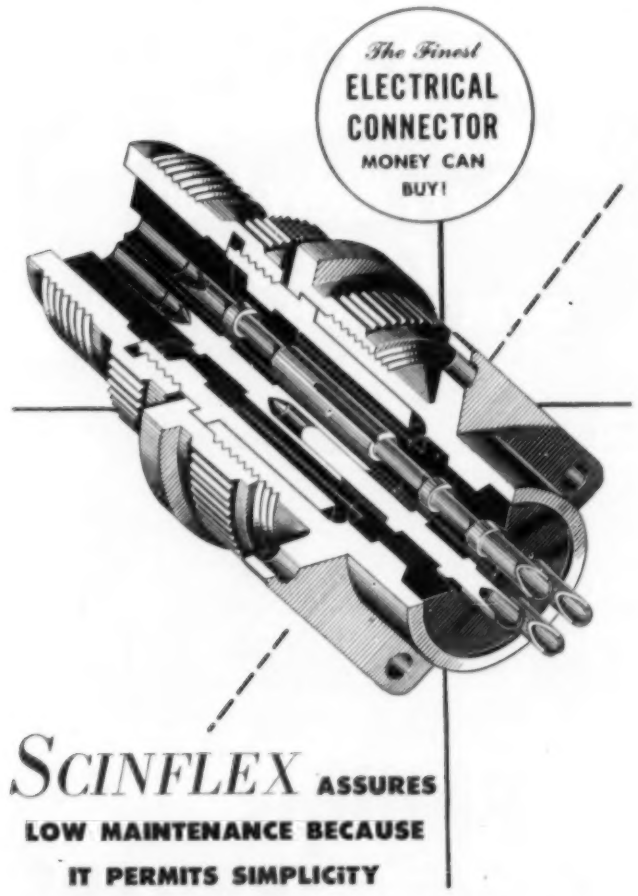
If you write maker identify as **IEN - 0461**

HEAT TREATING . . Conveyor-type electric furnace, 1,200 to 1,750 deg. F., is for continuous hardening of parts that can be group quenched. Atmosphere protection can be supplied. Bulletin 28-420, 8 pages. Westinghouse Electric Corp., Box 2099, Dept. IEN, Pittsburgh 30, Pa.

If you write maker identify as **IEN - 0462**

HEATING ELEMENTS . . Formed steel plate has integral passages for heating and cooling media to use as a pipe coil. Uses in 20-page Platecoil Bulletin 154 range from melting tar to serving as a furnace heat shield. Tranter Mfg. Co., 736 E. Hazel St., Dept. IEN, Lansing 4, Mich.

If you write maker identify as **IEN - 5712**



SCINFLEX ASSURES
LOW MAINTENANCE BECAUSE
IT PERMITS SIMPLICITY

When operating conditions demand an electrical connector that will stand up under the most rugged requirements, always choose Bendix Scinflex Electrical Connectors. The insert material, an exclusive Bendix development, is one of our contributions to the electrical connector industry. The dielectric strength remains well above requirements within the temperature range of −67°F to +275°F. It makes possible a design increasing resistance to flashover and creepage. It withstands maximum conditions of current and voltage without breakdown. But that is only part of the story. It's also the reason why they are vibration-proof and moisture-proof. So, naturally, it pays to specify Bendix Scinflex Connectors and get this extra protection. Our sales department will be glad to furnish complete information on request.

• Moisture-Proof • Radio Quiet • Single Piece Inserts • Vibration-Proof • Light Weight • High Insulation Resistance • High Resistance to Fuels and Oils • Fungus Resistant • Easy Assembly and Disassembly • Fewer Parts than any other Connector • No additional solder required.

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ELECTRICAL CONNECTORS

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NEW LITERATURE—Continued

If you write maker identify as **IEN - 0463**

HAND HOIST . . Chain hoist in sizes from ¼ to 25 ton, also roller-bearing trolleys for overhead travel, are reviewed in 6-page Bulletin H-32. Harnischfeger Corp., 4400 W. National Ave., Dept. IEN, Milwaukee 46, Wis.

If you write maker identify as **IEN - 0464**

ELECTRIC INSULATING . . Plastic casting resins to embed electronic components, plastic-foam sheets for embedment and sandwich construction, rod and sheet for rf. insulation. Technical Data Bulletins, 22 sheets. Emerson & Cuming Inc., 869 Washington St., Dept. IEN, Canton, Mass.

If you write maker identify as **IEN - 0465**

SOUND INSULATING . . Hushmush is a mineral-filler water-base asphalt emulsion to deaden sound and vibration from sheet-metal surfaces. It is odorless, fire resistant, applies by spray or wiping. Bulletin 6210, 4 pages. Philip Carey Co., Carey Walk, Dept. IEN, Cincinnati 15, Ohio

If you write maker identify as **IEN - 0466**

SHOCK ISOLATING . . Resilience of rubber dock fenders prevents damage to trucks and loading docks, ships, cars, equipment subject to shock contact. Bulletin A-5109-K, 12 pages, shows uses, gives sizes, load-deflection curves. Goodyear Tire & Rubber Co., Dept. IEN-722, Akron 16, Ohio

If you write maker identify as **IEN - 0467**

VIBRATION ISOLATING . . Adjustable bonded-rubber mount absorbs vibration, prevents "walking", quiets operation. "Look—No Lagging", 4 pages. Barry Corp., 1100 Pleasant St., Dept. IEN, Watertown 72, Mass.

If you write maker identify as **IEN - 0468**

VIBRATION ISOLATING . . All-metal construction, based on wire cushions, is the feature of Met-L-Flex vibration and shock mounts for aircraft, missile, rocket service. Bulletin 800, 4 pages. Robinson Aviation Inc., Teterboro Airport, Dept. IEN, Teterboro, N. J.

If you write maker identify as **IEN - 0469**

LAPPING . . Machines to lap flat and cylindrical work. The two flat models have 18 and 24-in. tables. "Lapping Machines", 6 pages, gives specifications. Spitfire Tool Co., 2931 N. Pulaski Road, Dept. IEN, Chicago 41, Ill.

If you write maker identify as **IEN - 0470**

LAYOUT . . Semi-steel surface plates, welding tables, floor plates, bench plates, straightedges, V-blocks, work benches. Catalog 838, 20 pages. Challenge Machinery Co., 1555 Fulton St., Dept. IEN, Grand Haven, Mich.

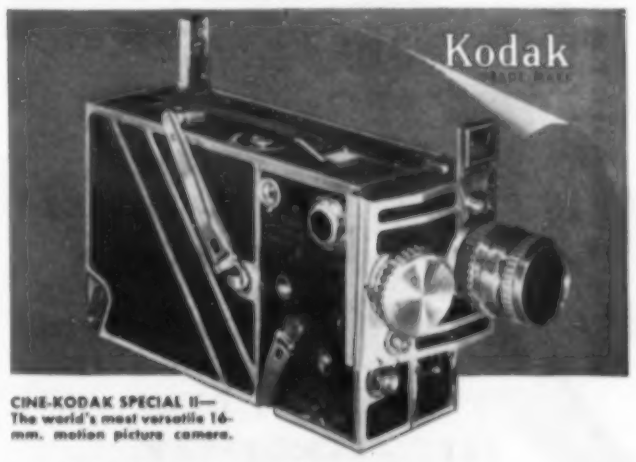
If you write maker identify as **IEN - 0471**

LIGHTING . . Sockets for small lamps in standard and miniature bayonet and screw models, bracket mounting. Catalog L-154, 24 pages, gives dimensions. Dialight Corp., 58 Stewart Ave., Dept. IEN, Brooklyn 37, N. Y.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 5714**

If you write maker identify as **IEN - 5715**



CINE-KODAK SPECIAL II—The world's most versatile 16-mm. motion picture camera.

Make movies that work for you!

In almost every industrial activity—engineering, manufacturing, employee training, research, safety and methods evaluation—in-plant movies are the fastest, easiest, and most effective method for putting across your story.

And for on-the-job movie making, many leading industrial companies have chosen the Cine-Kodak Special II Camera. It has the versatility to handle almost any type of job. Yet its simplicity of operation enables you to get high-caliber results almost as easily as taking home movies.

WRITE FOR FREE BOOKLET, V1-3, describing the Cine-Kodak Special II.

EASTMAN KODAK COMPANY, Rochester 4, N. Y.

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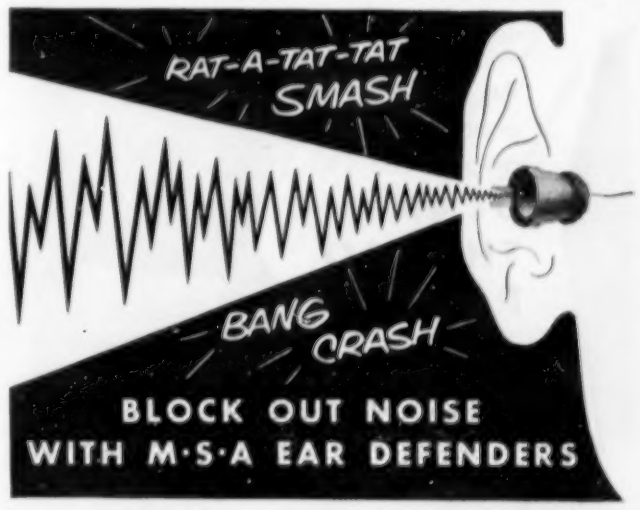
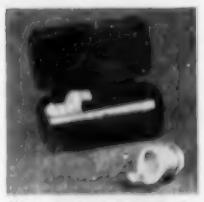


Here's the simple, inexpensive solution to the problem of loud, crashing industrial noise which often sets the stage for production slow-downs and fatigue. Scientifically designed MSA Ear Defenders keep harmful noise *out;* allow speech, warning signals, and phone conversation *in*. Soft, pliable, non-toxic elastomeric material gives perfect closure of ear canal, provides maximum comfort. Three sizes assure fitting every individual. Write for bulletin.



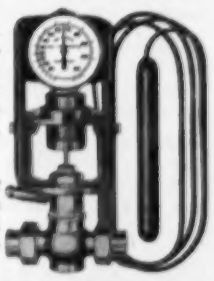
Plastic carrying case fits in pocket, keeps Ear Defenders clean and always handy for use.

MSA SAFETY EQUIPMENT HEADQUARTERS

MINE SAFETY APPLIANCES CO.
201 N. Braddock Ave., Pittsburgh 8, Pa.
At Your Service: 83 Branch Offices in the United States & Canada

If you write maker identify as **IEN - 5717**

Cut Cost of METAL FINISHING With POWERS NEW Temperature REGULATOR



For Plating, Anodizing, Bonderizing, Pickling, Cleaning, Rinsing, and Chromate Dips. Powers No. 11-MF Regulators will help you get the most effective use from various solutions by holding them at the right temperature automatically.

Plastic Covered Thermal Bulb and Tubing—is highly resistant to solutions in above processes. Prevents electrical shorts. No insulators required for the regulator.

Easy to Read 4" Dial Thermometer—indicates temperature of liquid being controlled and makes it easy to adjust regulator for different temperatures. (b61)

Bulletin 330 describes this simple, dependable control.

THE POWERS REGULATOR CO., SKOKIE, ILL.
Offices in over 50 Cities, see your Phone Book • Established in 1891

If you write maker identify as IEN - 5718

Now
YOU CAN SPOT WELD STEEL FROM ONE SIDE ONLY with AIRCOSPOT®

New inert-gas-shielded water-cooled AIRCOSPOT Gun welds stainless and mild steel sheet from one side only, without jigs or back-up plates! Nine-inch-long manual Gun weighs only four pounds. Fully automatic welding cycle:—simply set controls, touch Gun to work, and pull trigger. Current, gas and water connections made through single convenient control panel. Operates on 250-amp. DC with 55-volt open circuit voltage.

Write today for free pamphlet that gives complete specifications and operating data.

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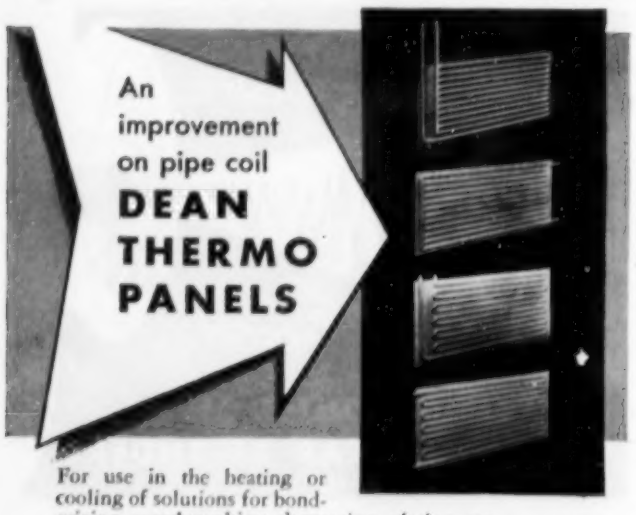
If you write maker identify as IEN - 5719



An improvement on pipe coil
DEAN THERMO PANELS

For use in the heating or cooling of solutions for bonderizing, metal washing, degreasing, plating, etc.
Low in first cost . . . light weight . . . space-saving . . . do away with expensive pipe coiling . . . provide efficient heat transfer.

Available in special shapes such as "U"s, "L"s, and cylinders . . . and in a wide range of materials, including iron, stainless steel, Monel and other special alloys.

Send for FREE bulletin giving facts and prices. **Dept. IEN5**

Manufacturers Representatives Wanted.
Write for details. Choice territories now open.

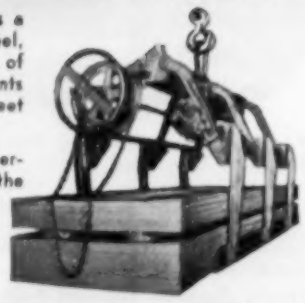
THERMO-PANEL DIVISION
DEAN PRODUCTS, INC. • 616 Franklin Ave., Brooklyn 38, N. Y.
STerling 9-5400

If you write maker identify as IEN - 5720

Wide *or* Narrow...

1 C-F LIFTER HANDLES THEM ALL

Whether your production requires a few or many widths of sheets steel, one C-F Lifter, with its wide range of jaw and carrying angle adjustments will probably meet all your sheet handling requirements.



Adjustments are made by the operator in a few seconds, permitting the Lifter to shift from wide to narrow sizes almost instantly.

Because it can pick up, carry and unload more loads per hour, using less man and crane time than any other methods, a C-F Lifter will soon pay for itself.

Bulletin SL-28 gives you the complete story of C-F Lifter advantages to you. Ask for it today. There is no obligation.

CULLEN-FRIESTEDT CO.
1310 South Kilbourn Avenue • Chicago 23, Illinois

NEW LITERATURE—Continued

If you write maker identify as IEN - 0472

FLUORESCENT LIGHTING . . Ballasts for general service, outdoor use, germicidal lamps, dc. operation, rapid start are cataloged in 8-page Bulletin GEC-983B with wiring diagrams on 24 fluorescent lamp circuits. General Electric Co., Dept. 6X-201, Schenectady 5, N. Y.

If you write maker identify as IEN - 0473

LIGHTING . . Overhead fixture lowers to ground level for cleaning and servicing when equipped with the Servisafe mechanism. Releasing the fixture disconnects it electrically. Pole and bracket types in 32-page Catalog PB-53. Thompson Electric Co., 1139 Power Ave., Dept. IEN, Cleveland 14, Ohio

If you write maker identify as IEN - 0474

EMERGENCY LIGHTING . . When the lights go out due to power failure, a relay in the Exide Lightguard turns on a battery supply. When power is restored, the relay turns off emergency illumination and recharges the battery. Bulletin 4808, 4 pages, tells how and where to use it. Electric Storage Battery Co., Box 8109, Dept. IEN, Philadelphia 1, Pa.

If you write maker identify as IEN - 0475

FLUORESCENT LIGHTING . . Nine shades of fluorescent lamps in 4-page Bulletin 1-166 range from "daylight" for color matching to "jade-lite" for work inspection. Lustra Corp. of America, 36 Washington St., Dept. IEN, Brooklyn 1, N. Y.

If you write maker identify as IEN - 0476

LUBRICATING EQUIPMENT . . Cutting coolant is sprayed directly on the work area by the company's Spray-Lube equipment, an adaptation of its Oil-Fog units. Bulletin 491, 8 pages, describes essentials and examples. C. A. Norgren Co., 3400 S. Elati, Dept. IEN, Englewood, Colo.

If you write maker identify as IEN - 0477

LUBRICATING MATERIALS . . Oils and greases for bearings and similar applications, also hydraulic oils, cutting oils, heat-transfer, dielectric and compounding oils. Industrial Products Bulletin A-2894, 4 pages. Sun Oil Co., 1608 Walnut St., Dept. IEN, Philadelphia 3, Pa.

If you write maker identify as IEN - 0478

PREFINISHED METAL . . How to use it in product manufacture, illustrated patterns and finishes, chart of properties and sizes, fabrication instructions, available peelable protective coatings, are in 24-page Catalog, letterhead request, please. American Nickeloid Co., Dept. IEN, Peru, Ill.

If you write maker identify as IEN - 0479

METERS . . Pocket-size unit snaps over an electric conductor to measure current from 6 to 1,200 amp. in three models, also measures to 600 volts. Catalog 134, 4 pages. Pyramid Instrument Corp., 630 Merrick Rd., Dept. IEN, Lynbrook, N. Y.

If you write maker identify as IEN - 0480

MOTOR CONTROL . . Motor starters and auxiliary equipment are grouped in control centers by means of interchangeable compartments. Bulletin PL-6200, 28 pages, shows how to plan a center and how typical units are constructed. Clark Controller Co., 1146 E. 152nd, Dept. IEN, Cleveland 10, Ohio

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5721

READ AIR VELOCITIES
instantly...
accurately...
anywhere...

...WITH THE
ALNOR VELOMETER

Alnor Velometer, a precision-built, self-contained, portable instrument, gives you instant, *accurate* readings of air velocities anywhere—in plants, mines, mills or laboratories. Measures speed of air flow through ducts, grilles, furnaces, spray booths or in the open. This rugged instrument needs no special care or delicate handling—anyone can use it and get accurate readings. Needs no calculations or reference charts. Available in a wide variety of scale ranges, and with a full assortment of jets and fittings for every application. You'll want full details and prices, so write for Bulletin 2448-G, Illinois Testing Laboratories, Inc., Room 517 420 No. La Salle St., Chicago 10, Ill.

Alnor
PRECISION INSTRUMENTS FOR EVERY INDUSTRY

If you write maker identify as IEN - 0481

ELECTRIC OVENS . . General-purpose and laboratory ovens to 649 deg. C. in a number of designs, also muffle furnaces to 1,090 deg. C. and a temperature-controlled water bath. Details on the line in 4-page Bulletin 1153. Blue M Electric Co., 306 W. 69th St., Dept. IEN, Chicago 21, Ill.

If you write maker identify as IEN - 0482

PACKINGS . . Palmetto G-T ring packing is a synthetic rubber unit that provides resilient sealing in a T-section. It is supported on each side by two non-extrusion retainers. How it works, how to use it, in revised 8-page Bulletin MP-68S. Greene, Tweed & Co., Dept. IEN, North Wales, Pa.

If you write maker identify as IEN - 0483

PAINT MASKING . . Line of materials for paint spray booths include three for deflocculating wash water, four for masking booths and fixtures, two for stripping. Bulletin A-107, 4 pages, tabulates information. Turco Products Inc., 6135 S. Central Ave., Dept. IEN, Los Angeles 1, Calif.

If you write maker identify as IEN - 0484

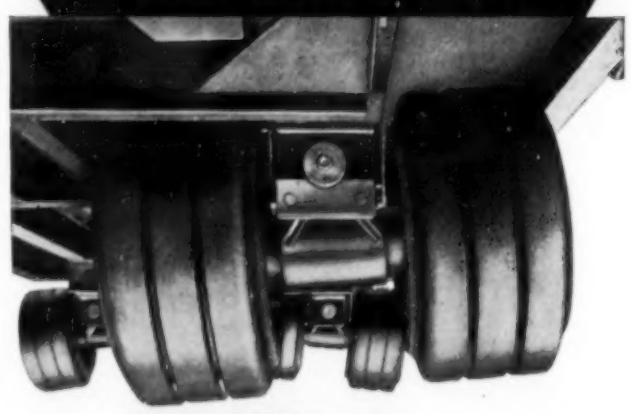
PLASTIC MOLDING . . Vacuum forming machine for thermoplastic film and sheet to ¼ in. thick, using a male or a female mold of wood, plaster, metal, has capacity of 27 by 57 inches. "Hydro-Vacumatic", 4 pages. Tamco Industries Inc., 290 Broadway, Dept. IEN, Huntington Station, N. Y.

If you write maker identify as IEN - 0485

PRESS ATTACHMENT . . "Iron Hand" unloads a press automatically up to 40 strokes per minute. It comes in pivoted-arm and floor models. Operating sequence pictures and adaptability details in 16-page bulletin. Sahlin Engineering Co., Box 289, Dept. IEN, Birmingham, Mich.

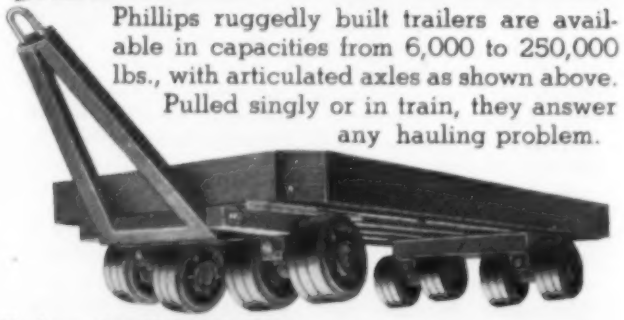
If you write maker identify as IEN - 5722

ARTICULATED AXLES
Carry Heavy Loads
SAFELY
OVER ROUGH TERRAIN



Phillips
Industrial TRAILERS

Phillips ruggedly built trailers are available in capacities from 6,000 to 250,000 lbs., with articulated axles as shown above. Pulled singly or in train, they answer any hauling problem.



The heavy-duty Model TFU-800 has a capacity of 80,000 pounds. *Ask for Bulletin E-35A.*

A sturdy, well-built trailer for general industrial hauling. Capacity of Model TF-60 is 6,000 lbs. *Ask for Bulletin E-16A.*

PHILLIPS
MINE AND MILL SUPPLY COMPANY
2300 JANE STREET
PITTSBURGH 3, PA.

Manufacturers for 90 Years

If you write maker identify as **IEN - 0486**

PRESS PART . . Pitman arm for a power press has an integral hydraulic cylinder to prevent damage should the press be overloaded. Diagram in 4-page Bulletin F-205, "Hydraulic Overload Pitman". Dayton Rogers Mfg. Co., 2824 13th Ave., Dept. IEN, Minneapolis 7, Minn.

If you write maker identify as **IEN - 0487**

PROCESSING . . Clarifiers and thickeners remove suspended solids from industrial wastes to prevent stream pollution. Some are shown in 4-page Bulletin AH-442 as examples. Hardinge Co., 240 Arch St., Dept. IEN, York, Pa.

If you write maker identify as **IEN - 0488**

PROTECTING . . Canister-type masks protect the wearer against gases, dusts, aerosols where there is sufficient oxygen present. Bulletin 541, 4 pages. Acme Protection Equipment Co., 3037 W. Lake St., Dept. IEN, Chicago 12, Ill.

If you write maker identify as **IEN - 0489**

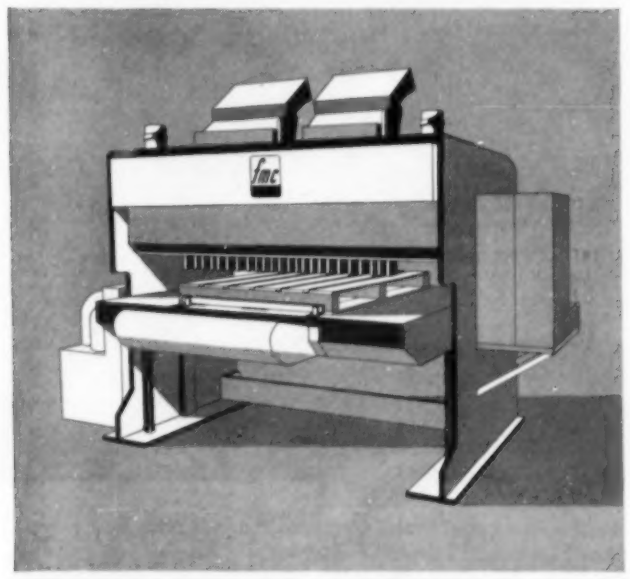
PULVERIZING . . Solid material tears itself to pieces by head-on collision from two opposed jet streams. Fines leave at the top of the Jet pulverizer. Oversize particles repeat the cycle. Bulletin 541, 4 pages. Majac Inc., 23rd St., at P. R. R., Dept. IEN, Sharpsburg, Pa.

If you write maker identify as **IEN - 0490**

OIL FIELD PUMPS . . Centrifugal and other pumps, steam turbines, diesel engines, compressors, drives for oil-field service. Bulletin WP-1099-B42F, 20 pages. Worthington Corp., 423 Worthington Ave., Dept. IEN, Harrison, N. J.

If you write maker identify as **IEN - 5724**

PREVUE OF NEW PALLET MAKER



NOW YOU CAN MACHINE-NAIL HARDWOOD PALLETS WITH AN fmc SEMI-AUTOMATIC PALLET MAKER

HERE ARE A FEW OF ITS MANY LABOR-SAVING, MONEY SAVING FEATURES...

THE FMC PALLET MAKER IS — An entirely NEW machine designed especially to machine-nail hardwood pallets—not just adapted to this service. It's designed for heavy-duty, continuous-duty operation.

THE FMC PALLET MAKER IS — Massively and ruggedly constructed.

THE FMC PALLET MAKER IS — Easy to install, operate and maintain. Adjustments to different nailing patterns are easily made in matter of seconds.

THE FMC PALLET MAKER HAS—Heavy duty nail chucks to support nails during **complete** length of drive. No bent nails.

THE FMC PALLET MAKER—Drives all nails to required depths; no misses or variables in the FMC positive drive.

The **new FMC semi-automatic PALLET MAKER** has many more engineering features that will save you money in machine-nailing hardwood pallets.

Write today for full information.

FOOD MACHINERY AND CHEMICAL CORPORATION
PACKING EQUIPMENT DIVISION: RIVERSIDE, CALIFORNIA

TRADE MARK

NEW LITERATURE—*Continued*

If you write maker identify as **IEN - 0491**

PLASTIC PUMP . . Eccentric rotor and flexible liner are combined in the Flex-i-liner plastic pump to handle corrosives, solvents, food products so fluid never touches metal. Bulletin, "Flex-i-liner," 4 pages. Vanton Pump & Equipment Corp., Dept. IEN, 7308 Empire State Bldg., New York 1, N. Y.

If you write maker identify as **IEN - 0492**

PYROMETERS . . Portable potentiometer indicator to check instruments, thermocouples, performance of ovens, heaters, furnaces to 2,800 deg. F. Bulletin A-303-1, 8 pages, covers this and a similar resistance thermometer. Foxboro Co., 42 Neponset Ave., Dept. IEN, Foxboro, Mass.

If you write maker identify as **IEN - 0493**

PYROMETERS . . Potentiometer-type indicator and recorder in 19 ranges from minus 100 to plus 3,000 deg. F. also will measure other variables in terms of dc. millivolts. Bulletin 60, "Thermo Electronic", 8 pages. Thermo Electric Co., Dept. IEN, Saddle River Township, Rochelle Park P. O., N. J.

If you write maker identify as **IEN - 0494**

RECORD KEEPING . . Type-780 time recorder prints attendance and job cards. Type-2500 recorder is primarily for job cost cards. Details in two 4-page bulletins, No. 53-6132 and 53-6152. International Business Machines Corp., 590 Madison Ave., Dept. IEN, New York 22, N. Y.

If you write maker identify as **IEN - 0495**

RECTIFIERS . . Selenium rectifiers for power, battery-charging, magnetic-amplifier, communication-equipment service. Catalog 666, 76 pages, presents schematic circuits, performance curves, engineering data, test procedures. List price is $1. Sarkes Tarzian Inc., 415 N. College Ave., Dept. IEN, Bloomington, Ind.

If you write maker identify as **IEN - 0496**

RUBBER PARTS . . Sixty-four page Catalog M-53 describes standard molded, extruded and cut rubber parts together with properties of natural and synthetic materials employed, suggestions on product design. W. H. Salisbury & Co., 401 N. Morgan St., Dept. IEN, Chicago 22, Ill.

If you write maker identify as **IEN - 0497**

SAWING MACHINE . . Mechani-Cut power hacksaw machine in sizes from 7 by 7 in. to 14 by 14 in. can be supplied with an automatic electrically-controlled work feed. Bulletin MC-51B, 16 pages, gives details on both. Peerless Machine Co., 1600 Junction Ave., Dept. IEN, Racine, Wis.

If you write maker identify as **IEN - 0498**

SCAFFOLDS . . How and where to use scaffolds around industrial buildings and equipment, selection by type of work performed, also ladders and trestles. Bulletin G-205-R, 8 pages. Patent Scaffolding Co., 38-21 Twelfth St., Dept. IEN, Long Island City 1, N. Y.

If you write maker identify as **IEN - 0499**

SEPARATING . . Centrifugal machine for countercurrent extraction of two immiscible liquids. Operation is described in 4-page Bulletin 102, "Super Centactor". Sharples Corp., 424 W. 4th St., Dept. IEN, Bridgeport, Pa.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 5726**

WW ALLOYS, INC.

for the BEST in Resistance Welding....

- ELECTRODES
- KAPTRODES
- HOLDERS
- SEAM WELDING WHEELS
- CASTINGS
- FORGINGS
- ROD and BAR STOCK
- COLD FORMED OFFSET TIPS

The **ALLOYS** *are right*
WW Alloys are made under strict metallurgical control . . . are specifically suited to their function.

The **DESIGN** *is right*
Time-tested and field-proven, WW design is universally accepted—each unit is truly "job-engineered".

The **DELIVERY** *is right*
Thousands of items are carried in stock for shipment the same day order is received.

Ask for our New Catalog

WW

WW ALLOYS, INC.
Division of Fansteel Metallurgical Corporation
11644 CLOVERDALE AVENUE, DETROIT 4, MICHIGAN

If you write maker identify as **IEN - 5727**

Keep cranes in service Cut maintenance costs

this booklet tells how

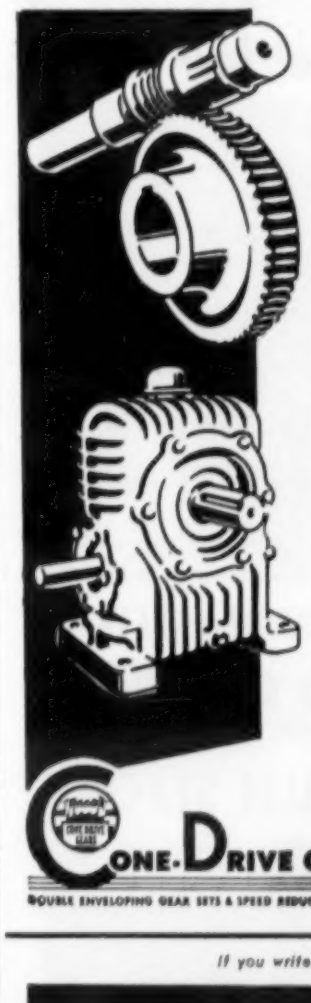
● This informative booklet on U·S·S Special Crane Rails and Fastenings can help you reduce crane and runway maintenance costs. It describes our three Special Crane Rail Sections—which were designed to give longer service under heavy wheel loads—and shows a special technique of tight-joint-assembly which, when combined with a new conception of "floating-rail" fastening, will result in fewer delays in crane operation and less maintenance expense.

To get your copy, just send your name and address to United States Steel Corporation, Room 4326, 525 William Penn Place, Pittsburgh 30, Pa.

U·S·S SPECIAL CRANE RAIL SECTIONS USS

UNITED STATES STEEL

If you write maker identify as **IEN - 5728**



AMAZINGLY COMPACT GEARING!

The most frequently cited reason for specifying Cone-Drive gears and speed reducers is "their amazing compactness."

The reason why Cone-Drive gears are so compact is that they are 'double-enveloping'. They thus have more teeth in continuous contact and load per tooth is distributed more evenly over each tooth face.

As a result, smaller gears—up to ⅓ smaller center distances—can be used to carry the loads when Cone-Drive gears are specified.

If space saving is one of your design objectives, it will pay you to look into Cone-Drive gears and reducers . . . NOW.

They can be a big help to you and they are available in a wide range of standard sizes and ratios.

CONE-DRIVE GEARS *Division, Michigan Tool Company*
DOUBLE ENVELOPING GEAR SETS & SPEED REDUCERS
7171 E. Nevada Road • Detroit 12, Michigan

If you write maker identify as **IEN - 5729**

Chicago MOUNTED Wheels

...now even better with **79E BOND**

Buy Chicago Mounted Wheels—bonded with 79E Bond—and you'll never use any other!

79E—a tough new bond exclusive with Chicago Wheel—is the sensation of the industry . . . it does a BETTER grinding, burring, and finishing job FASTER. A size and shape for every use. Deliveries are excellent—Order today.

CHICAGO WHEEL & *Mfg. Co.*
Dept. N • 1101 West Monroe Street, Chicago 7

If you write maker identify as IEN - 5730

HYDRAULIC PRESS
For Fast Production

Downward stroke on applicator pedal moves ram to contact work. Booster pedal builds pressures up to 10 tons. Release pedal retracts ram.

Ideal For All Jobs That Require Fast and Accurate Pressure

Studebaker SPEEDPRESS

- Self-contained—no air or electrical connections.
- Operated with precision foot operator.
- Eliminates old style Arbor Presses.
- SAFE — hands free to guide work.

Write for Bulletin No. 52

Studebaker MACHINE COMPANY

1235 S. 9th Avenue • Maywood, Ill.

If you write maker identify as IEN - 5731

Stack 'em HIGH at low cost...

HERE IT IS! A truck that stacks pallets just like conventional tiering trucks, yet costs much less. The RAYMOND Pallet Stacker was designed specifically for small plants and warehouses . . . is suitable for auxiliary use in large operations.

RAYMOND PALLET STACKER accommodates pallets 30" to 48" in width, tiers them up to 115" high. It actually right-angle stacks from aisles less than 6 ft. wide, has a maximum capacity of 2,000 lbs. Its ¾ HP motor-driven pump plugs into any 110 V socket, supplies power for raising loads quickly and easily. A hand lowering valve provides absolute control over the Pallet Stacker's speed of descent.

WRITE FOR CATALOG giving full details on the RAYMOND Pallet Stacker . . . and on other RAYMOND hydraulic elevating equipment. Fill in and mail the coupon today.

The RAYMOND CORPORATION
3535 Madison St., Greene, N.Y.

Please send me your new Hydraulic Equipment Catalog.

NAME _____ TITLE _____
COMPANY _____
STREET _____
CITY _____ STATE _____

NEW LITERATURE—Concluded

If you write maker identify as IEN - 0500

SEPARATING . . Vibrating-tray screening machines to do operations from dewatering pickle relish, screening sulphur to removing solids from waste water to prevent stream pollution. Bulletin FC-3, 8 pages. Simplicity Engineering Co., Ralph St., Dept. IEN, Durand, Mich.

If you write maker identify as IEN - 0501

STAMPINGS . . Special wrenches to 12 in. in length are stamped to meet your requirements. Phenolic plastic stampings are another specialty. Short runs on both. Bulletin 161, 4 pages. Federal Tool & Mfg. Co., 3600 Alabama Ave., Dept. IEN, Minneapolis 16, Minn.

If you write maker identify as IEN - 0502

STEEL . . Plate, sheet, strip, bars; alloy, tool and stainless; structural shapes; bolts, rivets, nails, wire and wire rope. Stock List, 226 pages, carries thousands of listings on sizes, shapes, grades. Jones & Laughlin Steel Corp., Gateway Center, Dept. IEN, Pittsburgh 30, Pa.

If you write maker identify as IEN - 0503

STAINLESS STEEL . . Picture book of 36 pages shows how Allegheny Metal is used in the pulp and paper industry for the equipment required. There also is a section on fabrication in Bulletin SS-27. Allegheny Ludlum Steel Corp., 2020 Oliver Bldg., Dept. IEN, Pittsburgh 22, Pa.

If you write maker identify as IEN - 0504

STEEL STRAPPING . . Hand and power applicator tools, power strapping machines, also strapping in a number of types, seals, corner protectors, car-banding materials, nail-type strapping. Catalog SS-9, 16 pages. Stanley Works, 195 Lake St., Dept. IEN, New Britain, Conn.

If you write maker identify as IEN - 0505

SWITCH . . Limit switch for machine-tool service has a lever-operated trigger-type mechanism. Illustrated details on how it works in 4-page Bulletin LS-54A. R. B. Denison Mfg. Co., 102 St. Clair Ave., Dept. IEN, Cleveland 13, Ohio

If you write maker identify as IEN - 0506

SWITCHES . . Snap-action switches in rolling-spring and in prestressed-blade designs, both in a variety of mountings and actuators. Catalog 98, 36 pages. Acro Mfg. Co., 2040 E. Main St., Dept. IEN, Columbus 16, Ohio

If you write maker identify as IEN - 0507

CHEMICAL TESTING . . Infrared spectrometer is offered for routine quality-control work on chemical products. Bulletin, "Model 12-C," tells about it. Perkin-Elmer Corp., Main Ave., Dept. IEN, Norwalk, Conn.

If you write maker identify as IEN - 0508

IMPACT TESTING . . Sonntag impact machines have maximum capacity of 240 ft. lb. for metals and 48 ft. lb. for plastics. Bulletin 4211, 4 pages. Baldwin-Lima-Hamilton Corp., Paschall P. O., Dept. IEN, Philadelphia 42, Pa.

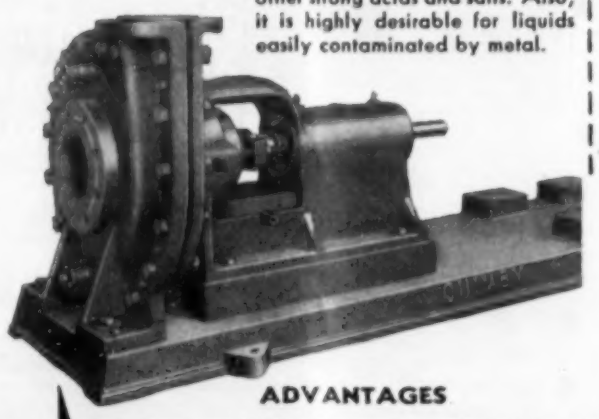
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5733

Custom Rubber Lined PUMPS

Warren-Quimby Type DB

For handling hydrochloric and other strong acids and salts. Also, it is highly desirable for liquids easily contaminated by metal.



ADVANTAGES

1. Custom rubber lined to meet special requirements
2. Resistant to chemical corrosion
3. Resistant to physical abrasion
4. Sound rubber-to-metal bond
5. Capacities, to 2000 G.P.M., heads to 125 feet
6. Sizes, ½" to 8"
7. Over-size bearings
8. Baseplate drip-protected

Send for Bulletin WQ-212 IEN-9

WARREN PUMPS

WARREN STEAM PUMP COMPANY, INC., WARREN, MASSACHUSETTS

If you write maker identify as IEN - 0509

ULTRASONIC TESTING . . "Reflectoscope" detects and locates a flaw or defect in solid material up to 30 ft. in depth and with access to one side. Bulletin 50-105, 8 pages, letterhead request. Sperry Products Inc., 1000 Shelter Rock Road, Dept. IEN, Danbury, Conn.

If you write maker identify as IEN - 0510

VISCOSITY TESTING . . How to use the company's Synchro-Lectric viscometer, points to watch for in making viscosity measurements, recalibrating the unit. "Solutions to Sticky Problems", 24 pages. Brookfield Engineering Laboratories Inc., 240 Cushing St., Dept. IEN, Stoughton, Mass.

If you write maker identify as IEN - 0511

STEAM TRAPS . . Condensed Bulletin 154 gives list prices on traps for ½ to 1½-in. pipe along with a capacity chart. The four-page bulletin also shows how two inlets in the head make possible in-line mounting. V. D. Anderson Co., 1935 W. 96th St., Dept. IEN, Cleveland 2, Ohio

If you write maker identify as IEN - 0512

HAND TRUCKS . . Suited for overhead or underfloor tow line service, in combination with use as hand push truck or trailer. Special types accommodate odd-shaped or heavy products. Bulletin 54-TL, 8 pages. Nutting Truck & Caster Co., 1125 W. Division St., Dept. IEN, Faribault, Minn.

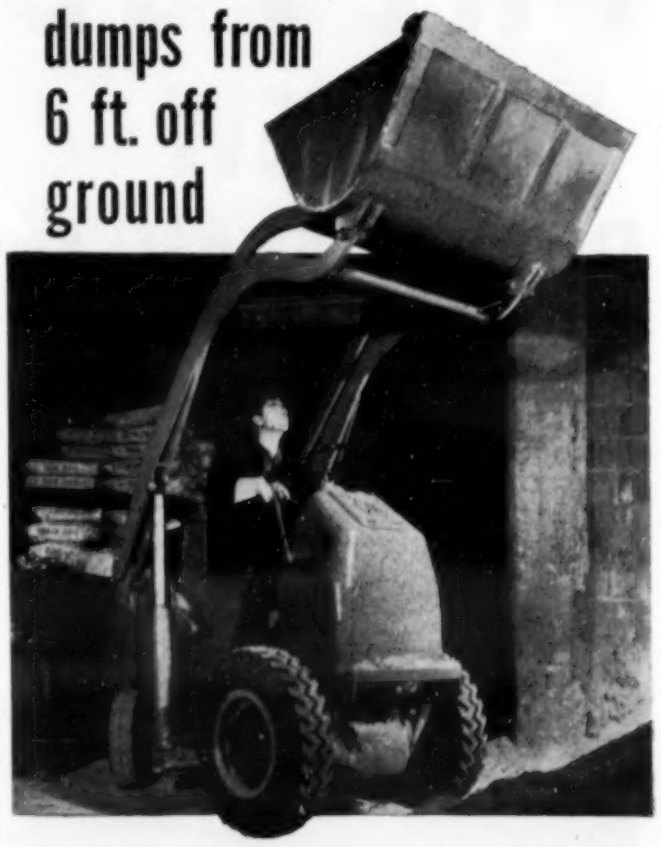
If you write maker identify as IEN - 0513

LIFT TRUCK . . Electric fork truck, ½ to 4 ton capacity, for standard plant and warehouse material-handling applications. "Palletier", 16 pages. Barrett-Cravens Co., 4609 S. Western Blvd., Dept. IEN, Chicago 9, Ill.

If you write maker identify as IEN - 5734

New Front End Loader

dumps from 6 ft. off ground



Westinghouse Air Brake Company's new Front End Loader dumps from a 73" position—20" higher than most comparable machines. And there's no heavy, structural steel framework in front to obstruct the operator's view—he can see his work easily and, as a result, load and unload bulk materials quickly. This feature, alone, can help to reduce materials handling costs in chemical, cement, and fertilizer plants, and in foundries.

Short wheelbase . . . Fast reversing

You need this new ½-⅝ yard Front End Loader in those cramped loading areas where space is limited or where you must maneuver quickly around sharp corners. The short wheelbase—a mere 46"—enables you to turn the machine completely around in a radius of only 74".

You can flip the planetary reversing transmission quickly from forward to reverse. It takes only seconds and reduces normal reversing time about 95%.

Get complete details

Our new brochure contains complete description, dimensions, and specifications for this new Westinghouse TL-50 Front End Loader. Write for your free copy.

Westinghouse Air Brake COMPANY

INDUSTRIAL PRODUCTS DIVISION, WILMERDING, PENNSYLVANIA

Manufacturers of air compressors, pneumatic cylinders, actuators, air control devices of all kinds, engineered pneumatic control systems and front end loaders.

Factory Branch: Emeryville, California
In Canada: Canadian Westinghouse Co., Ltd., Hamilton, Ontario

If you write maker identify as **IEN - 0514**

LIFT TRUCK . . Torque converter and a new transmission provide smooth operation for the company's power lift truck with no gears to shift. "Hydratork", 8 pages. Clark Equipment Co., Dept. IEN, Battle Creek 49, Mich.

If you write maker identify as **IEN - 0515**

LIFT TRUCK . . Model F-39T10 is an electric fork truck with a 5-ton rating in the company's Air Rights series. Bulletin B-512, 4 pages, has details. Elwell-Parker Electric Co., 4205 St. Clair Ave., Dept. IEN, Cleveland 3, Ohio

If you write maker identify as **IEN - 0516**

LIFT TRUCKS . . Maker of tin cans has to store them by the millions before the canning season. He does this outdoors in large paper bags. Job Study 133, 4 pages, tells how he uses power lift trucks to handle them safely and quickly. Towmotor Corp., 1226 E. 162nd St., Dept. IEN, Cleveland 10, Ohio

If you write maker identify as **IEN - 0517**

TUBES . . Beryllium copper tube in sizes from 0.0315 to 1.125 in. od., seamless and Weldrawn. Mechanical and physical properties, heat treatment, brazing, pickling, corrosion resistance, uses, standard tolerances, are in 9-sheet Data Memorandum 7-2. Superior Tube Co., 1538 Germantown Ave., Dept. IEN, Norristown, Pa.

If you write maker identify as **IEN - 0518**

STEEL TUBE . . Croloy 9M is a chromium-molybdenum steel for elevated-temperature service as pipe and tube that also must resist corrosion. Bulletin TDC-151, 4 pages, gives its properties in detail. Babcock & Wilcox Co., 4029 Fourth Ave., Dept. IEN, Beaver Falls, Pa.

If you write maker identify as **IEN - 5736**

Seam-Free Work Surface!

on New PIONEER

Stanflex

Plastic-Coated Work Gloves

Custom-fit, single seam lining (pat. pend.)—no seams on face of fingers, thumb, palm to chafe hands, wear out first. Elastic-knit jersey shapes to hand.

Wing-style thumb, curved fingers fit naturally, complete action freedom.

Tough bonded-vinyl coating won't peel or crack, always flexible, has amazing resistance to cuts, snags, abrasion—outwears leather. Satin-finish gives positive over-all grip. Water-tight, resists oils, acids, caustics, most chemicals.

PIONEER Stanflex plastic-coated work gloves available in knit wrist gauntlet, band top styles. Write today for complete information.

the PIONEER Rubber Company

235 Tiffin Road • Willard, Ohio

PIONEER Stanflex

Quality Gloves for 35 years

NEW LITERATURE—*Concluded*

If you write maker identify as **IEN - 0519**

STEEL TUBE . . Made in stainless and high alloys, ⅛ to 40 in. in diameter, welded from strip. 48-page "Trentweld" bulletin presents data on alloys available, tube properties, uses, joining methods, weights, hardness and other conversion tables. Trent Tube Co., Dept. IEN, East Troy, Wis.

If you write maker identify as **IEN - 0520**

TUBE FABRICATING . . Contract service bends and forms copper tube into a variety of shapes, also supplies headers, spun shapes. Bulletin H-58570, 8 pages. Mueller Brass Co., 1925 Lapeer Ave., Dept. IEN, Port Huron, Mich.

If you write maker identify as **IEN - 0521**

OPERATING VALVES . . Catalog 821, 60 pages, covers oil hydraulic flanged valves for 3,000-lb. service including 2-way, 4-way, check, reducing, relief, sequence units. Hydraulic Press Mfg. Co., Dept. IEN, Mount Gilead, Ohio

If you write maker identify as **IEN - 0522**

REGULATING VALVE . . Controls temperature of steam-heated equipment through a pilot that combines a pressure and a thermal element. Recommended connection diagrams in 4-page Bulletin 1008. Spence Engineering Co., Grant St., Dept. IEN, Walden, N. Y.

If you write maker identify as **IEN - 0523**

VENTILATING . . Man-cooling fans in pedestal and wheel-mounted designs, also an oscillating unit, sizes 18 to 42 inches. Capacity table in 6-page Bulletin 8001. Robinson Ventilating Co., Dept. IEN, Zelienople, Pa.

If you write maker identify as **IEN - 0524**

VENTILATING . . Plastic-dome aluminum skylight has an exhaust fan to provide daylight and ventilation through one roof opening. Specifications and a selection nomograph in 4-page bulletin, "Wascolite Ventdomes". Wasco Flashing Co., 87 Fawcett St., Dept. IEN, Cambridge 38, Mass.

If you write maker identify as **IEN - 0525**

VISES . . Two opposed double-acting air cylinders on a common base carry movable jaws with a V-groove in each. The jaws close to locate center within 0.001 in., horizontally or vertically. "Centr-Finder", 6 pages. Black Drill Co., 1400 E. 222nd St., Dept. IEN, Cleveland 17, Ohio

If you write maker identify as **IEN - 0526**

WELDING MATERIALS . . 1954 "Accessories Catalog" contains 24 pages on electrode holders, helmets, goggles, cable and connectors, cleaning tools, clothing. Metal & Thermit Corp., 100 E. 42nd St., Dept. IEN, New York 17, N. Y.

If you write maker identify as **IEN - 0527**

WOOD WORKING . . Machine makes wide boards from narrow ones in a single operation that combines dovetail-jointing, glueing, assembling and sizing at 60 fpm. "Linderman Process", 4 pages, shows a production schedule by stock length. Muskegon Machine Co., Dept. IEN, Newburgh, N. Y.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 5738**

NEW Aerovent Mancooler FANS

for spot cooling of men and machines
drying • exhausting • general ventilating

Beat heat and production lags this summer with Aerovent Portable Mancoolers. Pedestal, cradle and wheeled models—all adjustable for 180° directional air discharge. Heavy-duty welded construction. Sizes 24" to 48" for capacities to 40,000 C. F. M.

other models for every air-moving requirement

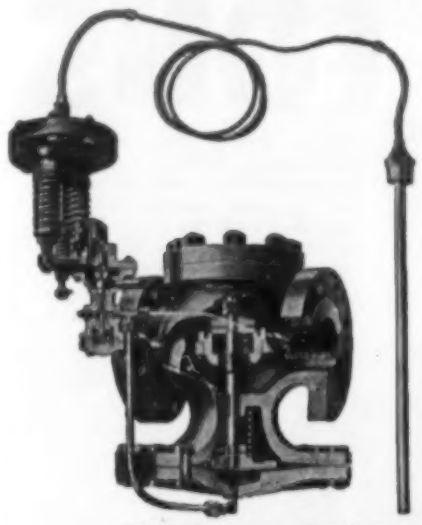
All Aerovent Fans are rated in accordance with the Standard Test Code and U.S.D.C. Comm. Std. CS178-51.

Ask for free folder M-50!

Aerovent Fan Company, Inc.
Ash and Brown Streets Piqua, Ohio

If you write maker identify as **IEN - 5739**

LOW COST Temperature Control



Tops in performance for both storage and instantaneous heaters, this pilot-operated Spence regulator offers these important advantages:

SECO Metal Seats and Discs — 20 years experience has failed to produce a single case where SECO Metal has been cut by steam.

Packless Construction — minimizes friction . . . eliminates much time-consuming maintenance.

Large Metal Diaphragm—under usual conditions never requires replacement.

ET150 Temperature Regulator

New bulletin gives complete data on the entire line of Spence regulators. They are made in sizes from ¼" to 12" for service with air, steam, water, oil or gas. Write for your free copy of Bulletin 500 today.

SE-100

Spence

SPENCE ENGINEERING COMPANY, INC.
WALDEN, NEW YORK

If you write maker identify as **IEN - 5740**

Now! General Plate Electrical Contact Kits for Laboratory and Development Use

K12 Electrical Contacts (Buttons)

K11 Electrical Contacts (Rivets)

A Wide Assortment of Sizes at Your Fingertips . . . Simplifies Design, Saves Time

These two General Plate Electrical Contact Kits are the answer to your contact requirements for development use.

Kit K11 contains a wide assortment of silver rivet contacts. Kit K12 has representative standard button contacts . . . silver facing on a base metal backing for projection welding. Also included are metal strips for fabrication of contact parts.

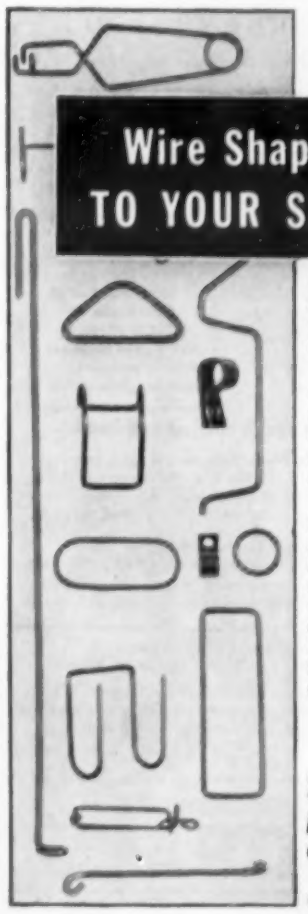
Dimensional working drawings are included so that you can duplicate the exact part on your own drawings.

These General Plate kits help you solve design problems by placing standard stock buttons and rivets at your fingertips. Once a design goes to production, there are no procurement delays . . . production quantities are available for immediate shipment from General Plate stock. Your contact inventories are minimized, "non-standards" are eliminated, delivery delays are avoided.

Available at a nominal cost . . . write for complete information and prices today.

METALS & CONTROLS CORP.
GENERAL PLATE DIVISION
75 FOREST STREET, ATTLEBORO, MASS.

If you write maker identify as **IEN - 5741**



Wire Shapes and Forms TO YOUR SPECIFICATIONS

● Your wire forms are produced fast, accurately and at low cost with Sommer mass-production methods.

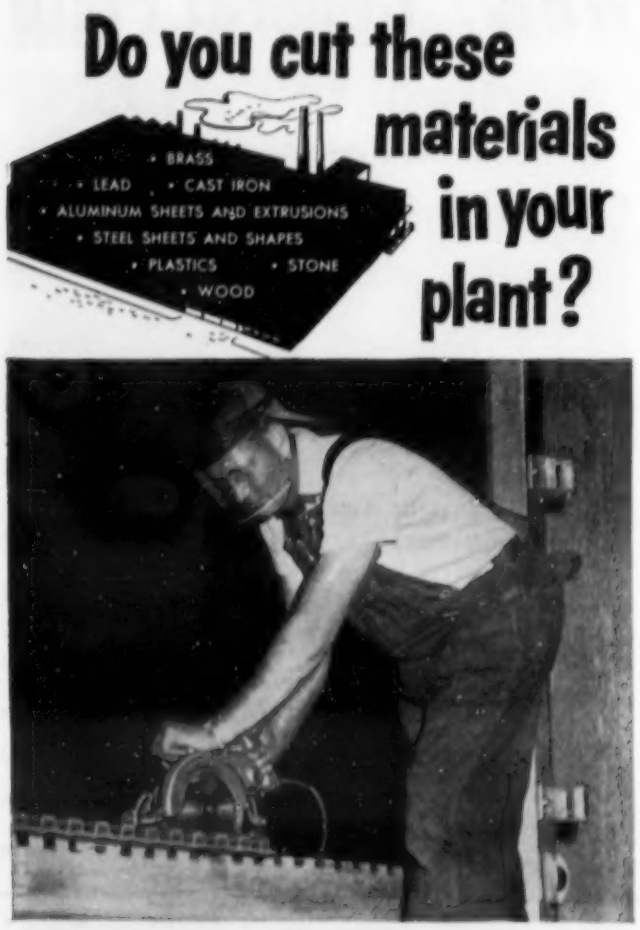
Speedy, automatic plating equipment handles either large or small assemblies. Popular new Zinc Iridite process adds a bright, durable, economical finish.

Sommer offers complete forming, stamping, cut-threading and butt-welding services. Let us work with you in designing and producing any wire shapes or forms needed for your defense contracts. Send sample, blueprint or drawing—see how Sommer can save you time and money.

SOMMER METALCRAFT CORPORATION
300 POSTON DRIVE
CRAWFORDSVILLE, INDIANA

If you write maker identify as IEN - 5742

If you write maker identify as IEN - 5743



then "SKIL has the answer!"

. . . with 9 high torque extra heavy duty SKIL Saws—3 high blade-speed, light weight, heavy duty builders saws.

. . . with 98 specially designed stock blades and cut-off wheels to cut almost any material you can name!

. . . to handle more cutting jobs economically with greater money and labor saving than ever before.

SAVE in the initial equipment cost. No need for expensive, heavy, stationary equipment.

SAVE in material handling. No need to move bulky material to machine.

SAVE by eliminating inventory of special blades or cut-off wheels.

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FREE! Test Cutting Service. Send us samples of materials and details of any cutting problems in your plant. We'll let you know the SKIL Saw and blade or disc that will best answer your problem.

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Made only by SKIL Corporation formerly SKILSAW, Inc. 5033 Elston Avenue, Chicago 30, Ill. 3681 Dundas Street West Toronto 9, Ontario Factory Branches in All Leading Cities

SKIL Corporation, Dept. IEN-54
5033 Elston Avenue, Chicago 30, Illinois
☐ I would like a SKIL Blade Selector
☐ I would like a demonstration and free trial
☐ Please send literature on SKIL tools
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Street
City Zone State

If you write maker identify as IEN - 5745

TESTING . . Gas analyzer checks quality of furnace atmosphere

Source: ELECTRIC FURNACE CO.
Dept. IEN, Salem, Ohio

For operation control

New analyzer applies a known gas atmosphere on a sample strip of work, of the same analysis as that of material to be put through a heat treating furnace, in order to determine the length of time the material can pass through the critical range in the available atmosphere to prevent discoloration.

A test is carried out by inserting the sample strip between two electrodes inside a Pyrex glass tube so the strip becomes the resistor in an electric circuit and can be heated to a required temperature. The gas atmosphere is then supplied to the tube and the specimen temperature is raised to that which will hold in the furnace on the production run.

At this point adjustments are made to establish a condition where discoloration will start. Data thus obtained are employed in operating the production furnace. The test equipment is enclosed in a housing that measures 22 by 9 by 9 inches. Weight is about 35 pounds.

If you write maker identify as IEN - 5746

MARKING . . Printing machine for small cylindrical work to ¾ inch

Source: MARKEM MACHINE CO.
150 Congress St., Dept. IEN, Keene 41, N. H.

Automatic

Cylindrical work having wire leads, such as resistors, condensers, capacitors, feed into this new machine to receive trade marks and similar identification at rates to 60 per minute. The machine is known as Model 45AF. It employs a chute feed that adjusts for work to 2½ in. in length by ¾ in. in outside diameter.

A type adaptor provides for change of printed information. Air-Dry ink is available from the company in various colors. Imprint is made by the transfer method and can be located at any point on the work. Drive is by a ¼-hp. motor and variable speed transmission. Assembly is on a floor stand. Overall dimensions are 15½ by 45 by 56 inches.

If you write maker identify as IEN - 5747

Fluorochemical "101" is a new inert fluid for use in the sight glasses of force feed lubricators. It remains clear and makes no deposit on the glass. It will not extract the additives in the modern lubricating oils passed through it in the lubricator. Minnesota Mining & Mfg. Co., 900 Fauquier St., Dept. IEN, St. Paul 6, Minn., supplies it.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5748

If you write maker identify as IEN - 5749

The adaptable BECK Automatic Roll Sheet Cutter makes possible both manufacturing pictures . . . it cuts sensitized photographic paper for the Haloid Company of Rochester, and closures or waxed material for the Irvington Varnish & Insulator Co. of Canada Ltd., of Hamilton, Ont.

And it does both these jobs at a saving . . .
SMOOTHLY . . . QUICKLY . . . ECONOMICALLY

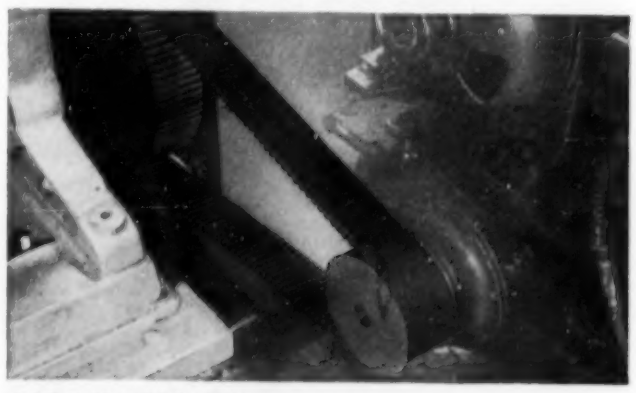
Why not put BECK in your production picture, too?

REMEMBER: If it comes in rolls, the Beck will cut it, count it and stack it!

CHARLES BECK MACHINE CORPORATION
412 N. 13th Street Philadelphia 8, Pa.

If you write maker identify as IEN - 5750

- *for low-cost speed reduction*
- *for high-efficiency drives, even at high ratios*
- *for quiet, non-slip drives*
- *for high-speed drives*
- *for low-maintenance drives*



GET THE ORIGINAL

Gilmer "TIMING" BELT STOCK DRIVES

from your NYB&P Distributor

WHETHER you want to step down the output of a high-speed motor . . . assure a fixed speed ratio between two or more shafts . . . or simply obtain a quiet, flexible, positive drive that needs no lubrication, your best bet is a Gilmer "Timing" Belt *stock drive!*

Here are some reasons why more than a million of these revolutionary toothed-belt drives are now in use:

CAN'T SLIP—Positive engagement of the "Timing" Belt's teeth with axially-cut pulley grooves assures no slippage, no creep, no power loss, precision control of speed ratio.

STRONG, LIGHT, FLEXIBLE—A single layer of continuously-wound, neoprene-encased, steel cable of high tensile strength gives the "Timing" Belt highest strength-to-weight ratio, with extreme flexibility. No stretch; no take-up. Range: to 50 hp from stock.

NO INITIAL TENSION—Teeth, not friction, provide the grip . . . reducing bearing loads and eliminating need for out-board bearings.

NO LUBRICATION—Absence of metal-to-metal contact eliminates need for lubricants, lubricating devices and housings. High speeds cause no lubricating problems.

ULTRA COMPACT—Very small pulleys can be used without slippage, permitting very short centers and high ratios.

SPEED RANGE—Operates without slippage at speeds of inches per day to 15,000 fpm. Mechanical efficiency is very close to 100%.

Ask your local NYB&P Distributor for a copy of the Gilmer "Timing" Belt STANDARD DRIVE MANUAL or use the request form to obtain a copy of the Manual and location of nearest stock-carrying distributor.

NYB&P NEW YORK BELTING & PACKING CO. America's Oldest Manufacturer of Industrial Rubber Products

If you write maker identify as IEN - 5752

ONE TORCH for ALL your needs!

G K

WELDING AND CUTTING OUTFIT

Here in one quality outfit is the ideal medium-sized torch for *all types* of repair, maintenance and light industrial jobs. New "O"-Ring design with gas-tight connections . . . ten tip assemblies with 360-degree alignment . . . mirror-smooth tip orifices for efficient, non-turbulent flame . . . heavy wall construction for faster heat dissipation . . . these are a few of the GK's many engineering features and results that team up to give you more profit FOR YOUR WORK!

WRITE FOR COMPLETE INFORMATION

MARQUETTE

MANUFACTURING CO., INC.

307 E. Hennepin Ave., Dept. IWM, Minneapolis 14, Minnesota

If you write maker identify as IEN - 5753

"U. S." VERTICAL Milling Machine

The economical answer to accurate, versatile vertical and angular milling.

Thoroughly tested on the job by many of America's foremost manufacturers.

Created by America's foremost producers of small milling machines, to fill the big need for a balanced-head vertical miller that provides greater capacity and flexibility than is normally associated with machines of its type.

The new U. S. Vertical ideally combines most advanced engineering, experience of practical machinists and modern design without sacrifice of basic characteristic "U. S." simplicity.

COSTS SURPRISINGLY LITTLE

Quickly pays for itself by simplifying or taking over vertical milling and boring jobs which often tie up far more costly standard machines.

SEND FOR COMPLETE DETAILS

Illustrated literature which describes complete specifications, capacities, exclusive features and advantages gladly furnished on request.

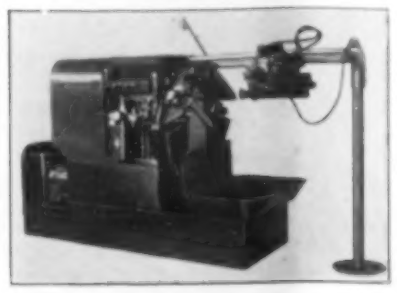
U. S. BURKE MACHINE TOOL DIVISION

Brotherton Road 5, Cincinnati 27, Ohio

If you write maker identify as IEN - 5755

CUTTING . . Cut off machine for bar stock and tube to 6¾ inches

Source: MODERN MACHINE TOOL CO.
605 Water St., Dept. IEN, Jackson, Mich.



Feeds and cuts off

Automatics No. 4 and No. 6 are new cut-off machines for bar stock, tube and pipe. No. 4 has capacity for 1½ to 4½ in. in outside diameter. No. 6 rates 2½ to 6¾ inches. Both machines are driven by 5-hp. 1,200-rpm. motors and both are equipped to circulate coolant on the work. An air operated micrometer stop gages length of the piece being cut. It is mounted on outboard parallel bar ways and provides 1¼ in. of clearance for the cut-off piece to drop into the pan. Each machine is provided with seven speeds selected by quick change pulleys. A Reeves variable speed transmission can be supplied.

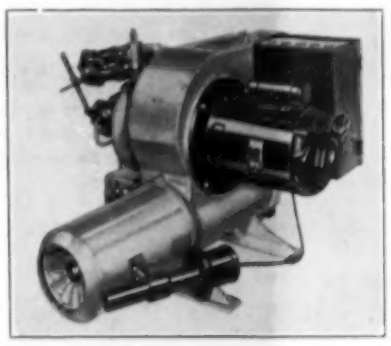
Two cross slides, one at the front and one inverted at the rear, are set at a 30-deg. angle with horizontal. Both can be equipped with cut-off tools or the front slide can be employed to cut-off while the rear slide is chamfering, burring or turning. A third cutting head can be applied for burring or chamfering on both outside ends of the work when the two cross slides cut off simultaneously.

Cross slide operation is by a rocker arm with adjustable cams. The arm is rotated by a double air-hydraulic cylinder in which hydraulic oil governs the rate of feed as it passes through an adjustable orifice. A check valve in the cylinder circuit is held open by a cam for the first part of the stroke for quick approach to the work.

If you write maker identify as IEN - 5756

HEATING . . Oil burner designed to fire space heating boiler

Source: CLEAVER-BROOKS COMPANY
326 E. Keefe Ave., Dept. IEN, Milwaukee 12, Wis.



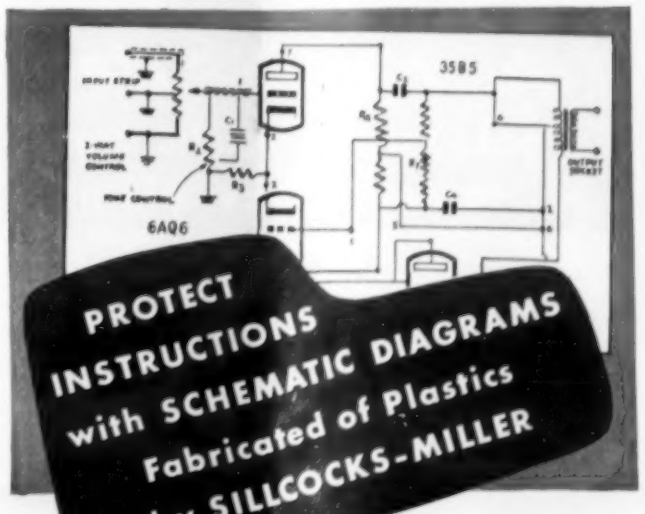
Air atomizing design

Hev-E-Oil "4" is a new electrically ignited oil burner to handle No. 4 or No. 5 fuel oil without preheating. It has been designed to heat a building containing over 1,500 sq. ft. of radiation or for installations where more than 45 ton of coal have been burned per year. The assembly is complete, ready to set into a boiler. It is wired ready for service lines. Automatic controls are connected and pretested. The control housing is mounted on the burner.

The unit supplies the required primary and secondary air. An oil metering pump measures the correct amount of fuel for a given operating condition. No front plate, secondary air or checkerwork hearth is required.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5757



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Pioneers in Plastic Fabrication since 1910

27 West Parker Avenue • Maplewood, N. J.

If you write maker identify as IEN - 5758

Dies last longer in the Oster Lightweight Champ because it has two driving arms on center line with spindle. They even up the load on die stocks . . . prevent excessive strain and wear on one side of the die.

Other features also help make it an outstanding value. A new wrenchless chuck grips and holds tight in either right or left hand direction; revolving non-binding rear chuck; indestructible all welded steel case. The standard range is ⅛" to 2". Range with drive shaft is 2½" to 8".

For complete data, write us or, better still, contact your local Oster distributor.

THE OSTER MANUFACTURING CO.
New Office and Factory:
2053 East 61st St. • Cleveland 3, Ohio

Builders of Cost Reducing Threading Equipment Since 1893

If you write maker identify as IEN - 5759

Complete Line of HEAD BLOCKS WINCHES COUNTERWEIGHT SYSTEMS

Loads ranging from a few pounds to 40 tons and more must be hoisted and moved quickly and safely on the theatre stage. The complete line of head blocks, hand and motorized winches and counterweight systems — all standard catalog items — which J. R. Clancy, Inc. has supplied for the stage for 76 years is available to meet the many similar requirements of modern industry.

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Theatrical Equipment Division

J. R. CLANCY INC.
1020 W. BELDEN AVE., SYRACUSE 1, N. Y.

If you write maker identify as IEN - 5760

Faster . . . Quieter . . wide speed range, 3 sizes.
300 lb.—lift rate 75 ft. per min.
500 lb.—60 ft. per min.
1000 lb.—40 ft. per min.

Smaller . . . one man can easily install.

Safer . . . no spark hazard . . . betters all safety requirements.

More Useful . . . for shipping docks . . . refineries, chemical plants, heat treating, plating . . . machine shops, foundries . . . appliance, furniture, textile, automobile and aircraft assembly . . . stock rooms.

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ARO AIR HOIST

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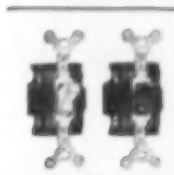
If you write maker identify as **IEN - 5761**

JUST THREE EXAMPLES OF P&S ENGINEERING AND MANUFACTURING SKILL

P&S *For Quick Wiring — For Long Life.*



P&S SUPER A. C. SWITCHES

Maximum Service — Quiet Operation — Long Life. Rated 15 and 20 Amp., 120 V. A.C., 277 V. A.C.

P&S Turnlok® Line

Sturdy—Easy to wire — Modern Design. Connectors, Caps and Receptacles — 10 and 20 Amp., 2, 3 and 4-wire.

P&S Polarized Devices

Extra thick bodies — extra heavy metal parts—to stand rough usage. A complete line of 10 and 20 Amp., 2, 3 and 4-wire connectors, caps and receptacles.

For information on complete P&S Line, send for Catalog No. 49. Specify P&S by catalog number.

Department IN

PASS & SEYMOUR, INC.
SYRACUSE 9, NEW YORK
Offices: 71 Murray St., New York 7, N. Y.
1229 W. Washington Blvd., Chicago 7, Ill.

If you write maker identify as **IEN - 5762**

REMINGTON STUD DRIVER saves up to 80% on fastening costs... speeds up the job!

"I installed metal window frames and partitions in record time"—says one maintenance man about the Remington Stud Driver. And you quickly realize how he did it when you see this powder-actuated tool drive 4 and 5 studs per minute in steel and concrete. That means real savings in time and labor.

Compact and portable, the Stud Driver weighs only 6 pounds and requires no outside source of power. It's ready to *go*—any time, anywhere, even in confined places inaccessible to ordinary fastening methods. And with the power of its 32-caliber cartridge, you know a stud is set to stay!

What's your fastening job?

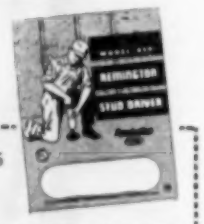
Whether anchoring wood plates to concrete floors or hanging radiator housings to concrete or brick—you can depend on the Remington Stud Driver to save you money. Send the coupon below for further information.

"If It's Remington—It's Right!"

Remington DU PONT

Listed & Approved by Underwriters' Laboratories, Inc.

MAIL THIS COUPON TODAY



Industrial Sales Division, Dept. I.E.N.-5
Remington Arms Company, Inc.
Bridgeport 2, Connecticut

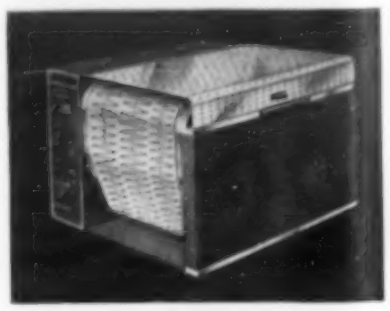
Please send me a *free* copy of the new booklets showing how I can cut my fastening costs.

*Name*_____
*Position*_____
*Firm*_____
*Address*_____
*City*_____ *State*_____

If you write maker identify as **IEN - 5764**

PRINTING . . Developer and drier takes 12 in. exposed paper film

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.



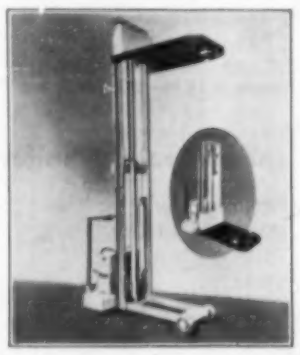
Operates at 12 fpm.

An oscillogram that has been exposed on a photosensitive paper film, 12 in. in width by 250 ft. in length, can be developed and dried in about 25 min. in this new oscillogram developer. It consists of four open tanks, a surface drying unit, motor controls and paper guides. The tanks containing developer, stop bath and stabilizer, stand in a water jacket that is electrically heated and thermostatically controlled to 100 deg. F. Drying is accomplished by drawing the developed oscillogram over the electrically heated cover. Drive is by a 220-volt 60-cycle ac. motor. Overall dimensions are 23 by 20 by 15½ inches. Weight is about 100 lb. dry.

If you write maker identify as **IEN - 5765**

TRUCK . . Hydraulic power lift for narrow skid platforms to 1 ton

Source: LIFT TRUCKS INCORPORATED
2545 Spring Grove Ave., Dept. IEN, Cincinnati 14, Ohio



For utility use

Model HHW designates a new battery powered hydraulic lift truck designed particularly to handle narrow skid platforms for tiering to heights of 108 in. in confined areas. The telescopic lift mechanism is available with a load rating of 1,000 and 2,000 pounds.

Platform width is minimum at 24 in. and standard at 26¾ inches. Frame width measures 38 inches. Platform length is 36 to 60 inches. In lowered position, the platform can be specified at 6, 7 or 11 in. above the floor. In raised position, it stands at 60 to 120 inches. Lift speed is 15 fpm. loaded or 30 fpm. empty.

If you write maker identify as **IEN - 5766**

Goshen Rubber Co., Dept. IEN, Goshen, Ind., can supply you with O-rings made of its new Compound 1120, a synthetic rubber that will prevent leakage of aviation type fuels at pressure to 1,500 lb. in a temperature range between minus 65 and plus 160 deg. F. The rubber maintains its flexibility at the low temperatures. It recovers rapidly from a shrunken condition to one of positive compression in non-aromatic fuels. It will not stick, stain or pit metal. It can be employed in connection with both aromatic and non-aromatic fuels and flushing fluids such as MIL-0-6081. Rings made of the material are available to specification.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 5767**

Just $1.53 *a day* puts this Automatic truck to work in your plant!

NEW "EARN-ITS-OWN-WAY" Plan streamlines materials handling without 1¢ capital investment

Compact, operator-led electric truck for horizontal movement of all kinds...up to 10,000 lbs. capacities.

Now, *all* Automatic trucks can be leased, complete with battery and charger, as easily as a place of business, immediately start earning their own way, PLUS a profit for you!

The unbelievably low rental cost for a Transporter, for instance, is just $1.53 a day over the 5 year lease (based on 60 months, 25 operating days per month) and only *14¢ a day* after it expires! Rates for heavier-duty lift trucks are proportionately low.

Or—if you prefer to *own* an Automatic truck—a modest down payment delivers the equipment, with 6 to 36 months to pay off the balance!

This flexible plan, provides liberal options for purchase or renewal so that you can have a plan "tailored" to your special needs.

Plans available in U.S.A. only.

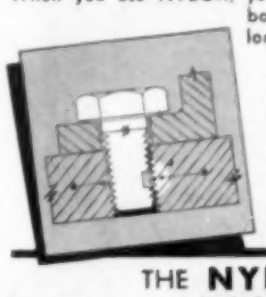
Automatic
109 West 87th St., Dept. E-4
Chicago 20, Illinois

World's Largest Exclusive Builder of Electric-Driven Industrial Trucks

If you write maker identify as **IEN - 5768**

You don't need SAFETY WIRING ... when you use NYLOK *ONE-PIECE* self-locking bolts and screws ...

Stop wasting time and money on intricate and complicated safety-wiring! Use NYLOK self-locking screws and bolts. They lock themselves in any position, seated or unseated . . . no other parts needed. They assure positive, vibration-proof locking without galling, distortion or mutilation of threads or seating surfaces. The resilient nylon insert provides the wedge that locks. It's always there, can't be left out or forgotten and may be safely re-used many times. So cut costly assembly time, eliminate extra safety-wiring labor and materials by using NYLOK self-locking screws and bolts. When you use NYLOK, you don't need drilled-head screws and bolts because NYLOK screws and bolts lock themselves!



• HOW NYLOK LOCKS •

Resilient nylon plug (A) sets up lateral thrust, smoothly wedging mating threads together (B). All of locking action is on the threads; head is not stressed. Locking is positive, seated or unseated. Provides leak-proof seal where liquids are involved.

For full specifications and details of service approval . . .

THE **NYLOK** Corporation

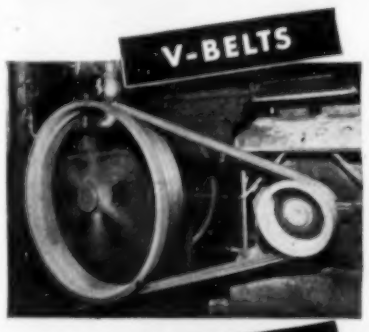
Manufacturers of Nylon-locked fasteners covered by U. S. patents and patents pending

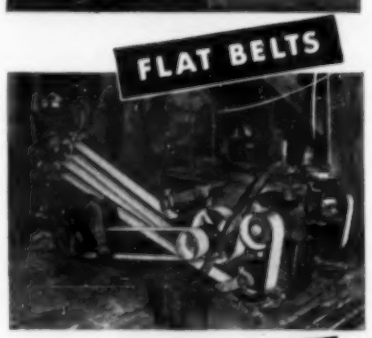
Offices in: New York City, Detroit, Chicago, North Hollywood

Main Offices and Factory — Elmira Heights, N. Y.

If you write maker identify as **IEN - 5769**

A complete line of V-Belts and V-Belt Drives, Flat Belts and Belting





Whatever your belt drive needs, "U.S." can supply it. With "U.S." distributors and warehouses located across the country, you get immediate shipment.

U. S. Rubber V-belt technicians are specialists in the transmission of power. These service engineers are always ready to see that you get the right belt for the right job. Get in touch with your distributor or contact any of our 25 District Sales Offices or write to address below.

- **U.S. Rainbow Multiple and F.H.P. V-Belts**
- **U.S. Rainbow Multiple and F.H.P. Sheaves**
- **Flat Belts and Belting**
- **Special Purpose Belts**

U. S. Rainbow Q. D. Sheaves
in a complete line

Quick-demountable sheaves bring many advantages . . . simplicity . . . inter-changeability . . . lowest cost for flexible inventory. Sheaves and V-belts from the one source guarantee your getting the *right* sheave with the *right* belt.

U.S. RUBBER SERVING THROUGH SCIENCE

"U.S." Research perfects it
"U.S." Production builds it
U.S. Industry depends on it

UNITED STATES RUBBER COMPANY

Mechanical Goods Division • Rockefeller Center, New York 20, N. Y.

Hose • Belting • Expansion Joints • Rubber-to-metal Products • Oil Field Specialties • Plastic Pipe & Fittings • Molded & Extruded Rubber & Plastic Products • Protective Linings & Coatings • Grinding Wheels • Packings • Tapes • Conductive Rubber • Adhesives • Roll Coverings • Mats & Matting

If you write maker identify as IEN - 5771

IBH* is the System

BIG JOE® is the Tool

*In-Between Handling—short distance hydraulic manipulation of materials too heavy for manual handling yet not requiring high priced power-driven equipment.

This system makes it possible for you to "custom build" your materials handling system to *exact requirements.* You can apply the right capacity to individual locations for exclusive use . . . improve your entire system . . . reduce equipment investment cost . . . slash operating and maintenance expenditures. More than 40 BIG JOE foot and battery operated lift trucks give you the selection you need.

Write for the IBH* Booklet

"HYDRAULIC HANDLING FOR EVERY DEPARTMENT"

BIG JOE Manufacturing Company
900-02 W. Jackson Blvd., Chicago 7, Ill.

© 1954 Big Joe Mfg. Co.

If you write maker identify as IEN - 5772

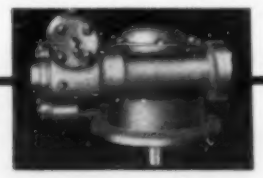
To whip toothpaste into a smooth, lump-free consistency *Abbé Dispersall Mixers use...*

Squeezed with ease from tube to brush, most toothpaste made today owes its smooth, lump-free consistency to Abbé Dispersal Mixers, according to Abbé Engineering Co., New York City.

Within each Abbé unit, two pairs of heavy paddles move through the paste in an intricate pattern with violent turbulence to break up agglomerations of solids and liquid globules. Directly coupled to the motor powering the paddles is a Winsmith Speed Reducer, Worm Gear Model 6 BDV, with an input of 1½ (or 2) hp at 1750 rpm and a reduction ratio of 81¼:1. *Correct stirring speed for thorough mixing is assured!*

Compactness of this Winsmith model, which features a flanged vertical design, proves especially advantageous to Abbé in meeting requirements for cover mounting within low headroom limits.

More than likely, you, too, will find a versatile Winsmith unit to best meet *your* requirements. With fully standardized differential, worm gear, helical gear and worm helical designs available, the Winsmith line is the most complete within its range of 1/100 to 85 hp and 1.1:1 to 50,000:1 reduction ratios. Request catalog 148 for details.

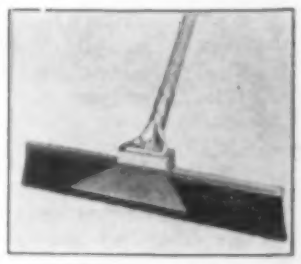


WINSMITH, INC.
10 DAVIS ST.
SPRINGVILLE (Erie County), N. Y.

If you write maker identify as IEN - 5774

BRUSH . . Light push broom, 18 to 36 in. metal backed brush strip

Source: FULLER BRUSH CO.
3580 Main St., Dept. IEN, Hartford 2, Conn.



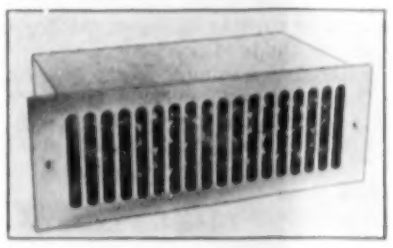
Also for painting

A handle, 62 or 68 in. in length, is fitted with a clamp head to take a metal backed brush strip in the assembly of this new Blade Sweep for general floor cleaning duty. The clamp is available in a single position design, shown in the illustration, or in one in which the blade can be set at various angles in the head. A scraper applies in the head to remove deposits of mud and grease. The brush strip can be specified with nylon, Palmyra and bassine mixture, white tampico, or tempered steel wire.

If you write maker identify as IEN - 5775

VENTILATING . . Fans and filter designed to deliver clean cooling air

Source: McLEAN ENGINEERING LABORATORIES
Box 531, Dept. IEN, Princeton, N. J.



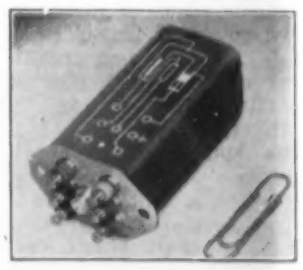
Self-contained

Two fans are mounted side by side with totally enclosed individual motors to draw in air through a filter and deliver it to pressurize the interior of an electronic cabinet. The arrangement provides for outward flow of air from the cabinet to prevent dust from entering. The unit fits a standard 19-in. electronic rack. It mounts a panel measuring 7 in. in height by 19 in. in width. Only the stainless steel grill and filter can be seen after the unit has been assembled in its location.

If you write maker identify as IEN - 5776

ELECTRONIC PRODUCT . . Chopper for dc. input to pulsating output

Source: AVION INSTRUMENT CORP.
299-48 State Highway 17, Dept. IEN, Paramus, N. J.



Model 207

DC input voltage is modulated by this new electronic chopper by alternate illumination at line frequency of the photoconductive element in a voltage divider. The design is characterized by freedom from drift and the fact that no output can be produced by resistance change. Assembly is in a housing measuring ⅞ by ⅞ by 2 inches. Weight is 1.6 ounces. Design life is over a minimum period of 3,000 hours. Typical applications are in null measurement circuits, servo mechanisms, computers.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

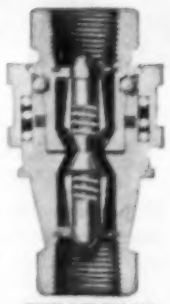
If you write maker identify as IEN - 5777

HANSEN

Quick-Connective
TWO-WAY SHUT-OFF COUPLINGS

Female pipe thread connections from ⅛" to 1"

Both ends of line are positively sealed when you disconnect a Hansen Series HK Two-Way Shut-Off Coupling. To connect, just pull back sleeve and push Plug into Socket. To disconnect, merely pull back sleeve. No tools required. Identical valves in Socket and Plug permit free flow of gas or liquid when Coupling is connected—practically eliminate spilling of liquid or escape of gas when disconnected. Available in brass or steel.



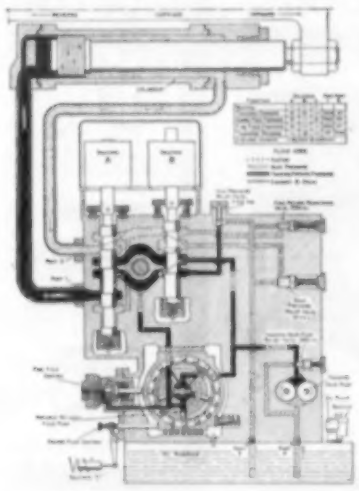
SERIES 4-HK TWO-WAY SHUT-OFF COUPLING

Also Straight-Through and One-Way Shut-Off Couplings. Write for catalog.

THE HANSEN MANUFACTURING COMPANY
4031 WEST 150th STREET • CLEVELAND 11, OHIO

If you write maker identify as IEN - 5778

ANY-FEED Oilgear Power Unit

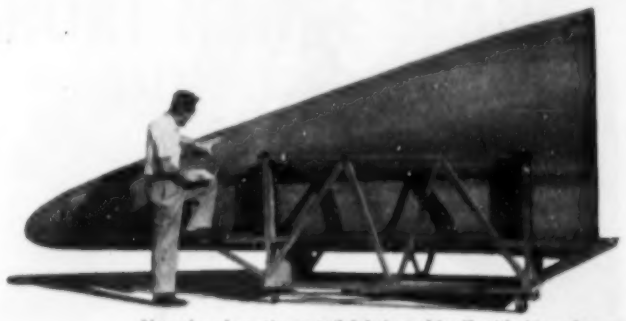


For machine tool and other straight-line feeds

An amazing little fluid power feed pump for practically any machine tool or straight-line feed installation you can think of. It embodies the *Any-Feed* Oilgear Fluid Power unit with a 20:1 range and rapid traverse as high as 265:1 over feed rate. It provides undeviating precision day in and day out once the feed rate is set.

It installs *into* your assembly easily, or mounts nearby or remotely. Yet control of the many possible functions is found in the electric pushbutton station; or partial or completely automatic operation is available. It affords complete operating safety for all action is instantly neutralized in case of accident. All parts are completely and easily accessible. The design is simple; you mount, connect two pipes and control wires. Write for descriptive Bulletin 44200 now while you think of it. THE OILGEAR COMPANY, 1567 West Pierce Street, Milwaukee 4, Wisconsin.

If you write maker identify as IEN - 5779



Navy bomber stinger tail fabricated by Zenith Aircraft—Division of Zenith Plastics Co., Gardena, Calif.

Can your designs duplicate this 80 per cent saving with REINFORCED PLASTICS?

Five of these big reinforced plastic stinger tails for the price of *one* made from conventional materials! The tails carry submarine detection devices for the Lockheed P2V Neptune.

The great savings result from fewer engineering man-hours at the design stage, use of less expensive tooling and manufacturing equipment, greatly simplified fabrication techniques even for complex designs, faster production cycles, and the need for considerably less factory floor space.

And look at the size—17 feet long! Virtually no stringers, frames, bulkheads, or fittings are used. Reinforced plastics, made with glass cloth and BAKELITE Polyester Resins, are so strong that this structure withstood tests up to 300 per cent of its design load.

Your product may gain similar worthwhile design advantages from these properties of reinforced plastics:

They can be easily fabricated into relatively large sections
They have a high strength-weight ratio
They possess both thermal and electrical insulating properties
They resist corrosion, chemicals, moisture, oil, and grease—are easy to keep clean
Their economies include low-cost tooling, savings in freight, assembly, and handling, and long service life

Learn more about BAKELITE Polyester Resins for reinforced plastics. Write Dept. XC-14 for free descriptive literature.

BAKELITE
TRADE-MARK
POLYESTER RESINS

TRADE MARK

BAKELITE COMPANY
A Division of
Union Carbide and Carbon Corporation
UCC
30 East 42nd Street, New York 17, N. Y.
In Canada: Bakelite Company
Division of Union Carbide Canada Limited
Belleville, Ontario

If you write maker identify as IEN - 5781

angle steel, inc.

If you write maker identify as IEN - 5782

Johansson Gage Blocks and Accessories can be quickly assembled into actual working gages that perform hundreds of high-accuracy measurements. Used as "Go"—"Not Go" gages, trammels, height gages, etc., they keep gage construction costs at a minimum . . . assure precision standards at every stage of manufacture.

Brown & Sharpe Jo-Blocks are available singly or in sets—for use as laboratory or working standards. The many Accessories extend their use to almost limitless applications. Write for Catalog. Brown & Sharpe Mfg. Co., Providence 1, R. I., U. S. A.

BUY THROUGH YOUR LOCAL DISTRIBUTOR

Brown & Sharpe JBS

If you write maker identify as IEN - 5783

Now Save 36%
On Installation Time

Just push tube into fitting without removing nut and tighten . . . that's all.

Repeated, thorough tests reveal that IMPERIAL HI-DUTY FITTINGS can be assembled in 36% less time than regular COMPRESSION TYPE FITTINGS . . . and in 71% less time than FLARE TYPE FITTINGS. These are spectacular savings.

Fitting is furnished with integrated nut and sleeve assembled. To get a tight joint, simply insert tube into fitting and tighten nut. No loose sleeve to drop.

MAKES FAR STRONGER JOINTS because sleeve is always in perfect alignment and because its design minimizes deformation of tubing. Hi-Duty Fittings remain leakproof even under severe service; withstand over 5 times as much vibration as ordinary compression or flared fittings.

Furnished in Brass, Aluminum, Steel and Stainless Steel For Tubing ⅛" to ¾" O.D.

See Your Supply House

Ask for Bulletin No. 3002

THE IMPERIAL BRASS MFG. CO., 508 S. Racine, Chicago 7, Illinois
In Canada: 334 Lauder Ave., Toronto, Ontario

IMPERIAL Pioneers in Tube Fitting and Tube Working Tools

If you write maker identify as IEN - 5784

WEIGHING . . Precision balance arranged to handle large objects

Source: FISHER SCIENTIFIC CO.
717 Forbes St., Dept. IEN, Pittsburgh 19, Pa.

Bulletin, "Gram-Atic"

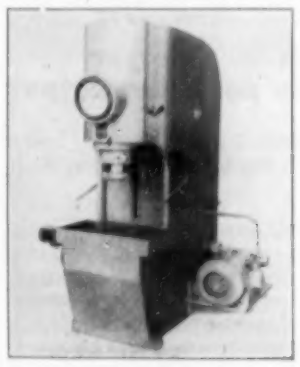
New assembly of the Gram-Atic precision laboratory balance is now available to weigh materials such as paper, sheets of dried paint, film or cloth, and odd sizes of analytical laboratory apparatus too bulky to fit into the weighing compartment of the balance itself. Changes in the regular design include two ports cut in the floor beneath the pan to take a yoke with a hook to hold the specimen and a compensating weight to balance out the yoke when the precision balance is being employed in usual manner. Cover caps close the ports in the latter case. The scale can be mounted above an oven or shielded chamber, as shown in the illustration, so the specimen can be enclosed for the required determinations. Specimens weighing up to the balance capacity, 200 gm., can be weighed directly.

Weighing procedure is the same as in the standard design in which weights are removed by turning knobs on the front of the balance, after the sample has been positioned. As each weight is removed, it is registered on a counter on the housing and on an optical scale beside the counter which provides 50X magnification and is projected against a vernier. Weighing accuracy is within 0.05 mg. The standard 200 gram balance without the new attachments lists at about $900. List with the attachments is about $950.

If you write maker identify as IEN - 5785

PRESS . . Hydraulic machine, self-contained, for straightening use

Source: AMERICAN BROACH & MACHINE CO.
Dept. IEN, Ann Arbor, Mich.



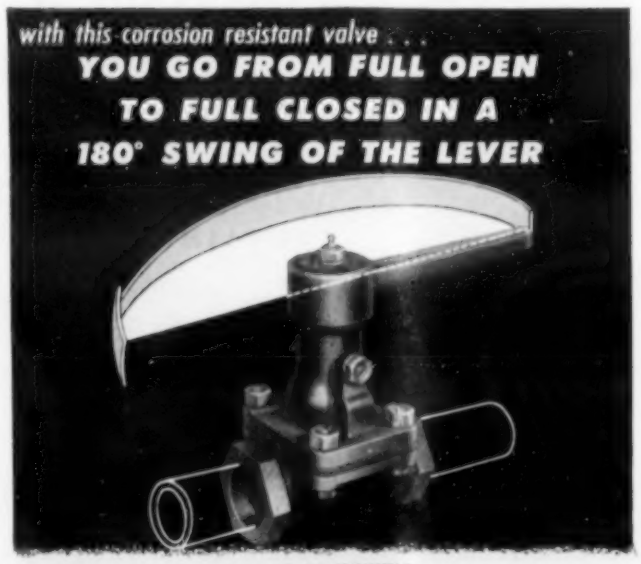
Gage to order

Three sizes rate 75, 100 and 150 ton, with pressure at 2,350 to 2,550 lb., in this new self-contained hydraulic straightening press. Cylinder diameter is 9, 10 and 12½ inches. Ram diameter is 6¼, 7 and 9 inches. Maximum stroke is 16 inches. Maximum open height is 20 inches. The table measures 20 by 36 inches. Overall height is about 9½ feet. Weight is 16,000 to 20,000 pounds.

The hydraulic circuit employs two separate pumping units, both of which are used for rapid advance and return. One of the pumps is employed for the power pressing stroke. A decompression valve in the circuit prevents high pressure shock when the stroke is reversed. Rapid advance is at 124 or 125 ipm. The power stroke is at 19, 20 and 15 ipm. Rapid return is at 248, 250 and 260 ipm.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5786



HILLS-McCANNA
Quick Opening
SAUNDERS PATENT DIAPHRAGM VALVES

Dependent upon materials and size, Hill-McCanna Saunders Patent Valves are suitable for temperatures to 400°F., pressures to 150 psi. Write for descriptive literature.

HILLS-McCANNA
Saunders Patent
diaphragm valves
HILLS-McCANNA COMPANY, 2347 Nelson Ave., Chicago 18, Ill.

If you write maker identify as IEN - 5787

SPRAYING . . Electric melter, hose lines and gun to apply molten wax

Source: STA-WARM ELECTRIC CO.
1954 N. Chestnut St., Dept. IEN, Ravenna, Ohio

Available to order

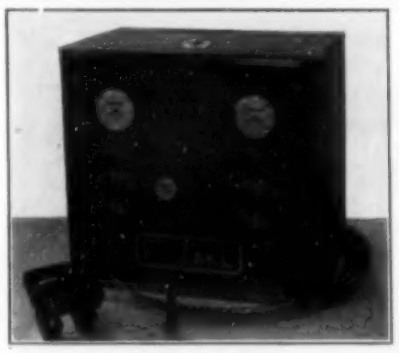
Solidified wax is placed in the main housing of this new assembly of melting and spraying equipment. It is brought to a molten condition where it is held under thermostat control and is delivered through an electrically heated hose to a gun, also electrically heated, for delivery in the form of spray. The wax can be applied in about the same way as heavy paint.

The equipment is available in tank capacities of 5, 10, 25 or more gallons. Heat input is from a 110 or 220-volt ac. line. The wax is moved through the hose line by air pressure. Clamps secure the lid of the melting tank against pressure.

If you write maker identify as IEN - 5788

GAGE . . Air-electric instrument for fast production line inspection

Source: FEDERAL PRODUCTS CORP.
1144 Eddy St., Dept. IEN, Providence 1, R. I.



Model AIR H-129

Two outside diameters of a polished bearing part are inspected simultaneously by this new assembly of the company's Dimensionaire and Electricator gages. Work pieces are positioned in a pneumatic gaging head and the resulting air signal shows for each of the two dimensions on two dials on the instrument housing. At the same time one of three lights flashes green for satisfactory, amber for borderline deviation, and red to indicate oversize. No physical contact is made between the gage and the work piece so there is no danger of marring finished surfaces.

If you write maker identify as IEN - 5789

Speedi-Service is a new record file that has been set up by Broderick & Bascom Rope Co., 4213 Union Blvd., Dept. IEN, St. Louis 15, Mo., covering the wire rope employed on equipment in your plant. You can supply this information to the company or the company's distributor if you have not already done so. The record will be set up and rope will be made available for immediate delivery. When you need it you tell the distributor or the company and the rope will be on its way to you immediately.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5790

CONTROL VALVES IN ANY ACTUATION

FOR AIR, OIL AND WATER

From over 1,000 standard combinations there is a type and size VERSA VALVE to suit every compressed air and low pressure water or oil hydraulic need, (0 to 200 psig). Interchangeable hand, foot, cam, pilot and solenoid actuating devices for 2-, 3-, and 4-way types in all popular sizes. Spring return, spring center or no spring action optional for any type actuation. All VERSA VALVES available in manifold mounting design.

Functionally designed to do a job, VERSA VALVES are unequalled for modern appearance and compactness. And any VERSA VALVE can be completely disassembled with an ordinary screw driver without disturbing pressure line connections.

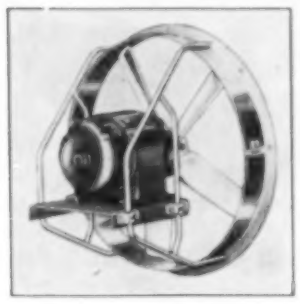
SEND FOR YOUR FREE CATALOG AND DATA SHEETS

VERSA PRODUCTS COMPANY, INCORPORATED
249 SCHOLES STREET BROOKLYN, NEW YORK

If you write maker identify as **IEN - 5791**

VENTILATING . . Motor driven fan for exhaust duty, 12 to 48 in. sizes

Source: M & E MFG. COMPANY
2571 Winthrop Ave., Dept. IEN, Indianapolis 5, Ind.



Handles smoke, fumes

Rating is 980 to 32,400 cfm. for this new line of ring mounted motor driven aluminum blade fans. Mounting is directly on the motor shaft and the motor is positioned on a bracket at the rear of the mounting ring. Totally enclosed motor design is standard construction.

If you write maker identify as **IEN - 5792**

SIGNALING . . Television equipment reproduces observed remote conditions

Source: NEELY ENTERPRISES
7422 Melrose Ave., Dept. IEN, Los Angeles 46, Calif.

Technical data upon request

A camera, control and synchronizer-monitor are the three basic units in new closed circuit television equipment. It is particularly suited for plant protection from a central point, observation of hazardous operations from a safe distance, stock room materials handling, traffic control. The camera measures 9½ in. in length by 3½ in. in width by 5¼ in. in height. It connects by means of a cable for location as far away as 500 ft. from the control unit where required adjustments are made.

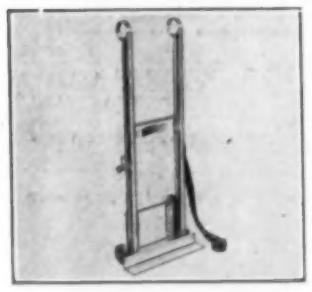
The control measures 19 by 8¾ by 13¼ inches. The synchronizer-monitor includes a synchronizing generator capable of producing a commercial quality picture and a 10-in. monitor tube, large enough to make the use of additional receivers unnecessary. This unit measures 19 by 19 by 12¼ inches. Additional cameras controls for remote monitors can be added.

Operation is on 110-volt 60-cycle ac. with 150-watt input. The lens mount is 16 mm. Type C. Cost of the three basic units is about $2,000. Operating cost is about 25 cents per hour.

If you write maker identify as **IEN - 5793**

TRUCK . . Magnesium hand unit for appliances, has stair climbers

Source: AMERICAN PULLEY CO.
4200 Wissahickon Ave., Dept. IEN, Philadelphia 29, Pa.



Easy-Up Model MA

Endless belts, riding on 13 rollers, form treads in addition to the two regular wheels on this new appliance handling truck. They ride freely up and down stairways with the truck empty or loaded. The truck is equipped with a web strap and a patented self-tightening buckle to lock a load in place.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 5795**

HANDLING . . Power shovel for bulk materials and general utility

Source: WESTINGHOUSE AIR BRAKE CO.
1953 Hermann Ave., Dept. IEN, Wilmerding, Pa.

Bulletin Model TL-50

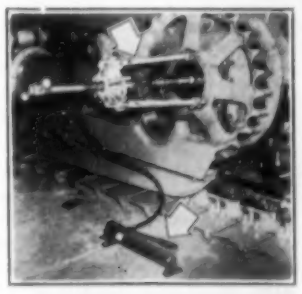
Rocking action of the bucket, to pick up a load, 90-in. clearance above the ground in top carrying position, 74-in. clearance from the ground to the lower bucket lip in dumped position, planetary reversing clutch type transmission with spring loaded clutches operating in oil, characterize this new Front End Loader, Model TL-50. The combination of 46-in. wheel base and the bucket operating characteristics suit the shovel for use in confined locations.

Bucket capacity, struck flush, is 12 cubic feet. Static load capacity is 1,250 pounds. The bucket measures 44 in. in width. It has a maximum reach of 22 in. at 6-ft. dumping clearance and 32 in. at 5-ft. clearance. The power operated hydraulic cylinders will lift the bucket with its load to full height in 7 sec. and will lower it in 5 seconds.

Power is supplied by a 33½-hp. gasoline engine operating at 2,000 rpm. Travel speeds are 2¾ and 6¼ mph. in forward direction. They are 3¼ and 7¼ mph. in reverse. Turning radius, to the tip of the bucket, is 61 inches. Assembly weight is 5,250 pounds.

Standard equipment includes a foot throttle, electric starter, horn, oil bath air cleaner and muffler. Accessories, available to specification for utility use, include a bulldozer blade, crane hook, lift forks, bucket teeth, snowplow, snow bucket, lights, cab, hard rock tires and buckets of specified width.

If you write maker identify as **IEN - 5796**



Hand hydraulic tools, rating to 50 ton, are available from Owatonna Tool Co., 371 Cedar St., Dept. IEN, Owatonna, Minn., to remove and install standard sprockets on Allis-Chalmers, Caterpillar and International-Harvester tractors. The new tools take most of the manual effort out of the sprocket pulling job.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 5798**

. . . . WHAT'S NEW AT BRISTOL . . . .

CONTINUOUS STANDARDIZATION with no dry cells

. . . in Bristol Electronic Dynamaster Potentiometers and Pyrometers

• **CONTINUOUS STANDARDIZATION** eliminates need for dry cells —supplies voltage that is continuously compared with standard cell.

• **CONTINUOUS OPERATION—NO TIME OUT.** With continuous standardization, the potentiometer is free to continuously measure, record, and control. No time out or interruption is required for periodic standardization.

• **NO STANDARDIZING MECHANISM.** Continuous standardization is taken care of electrically. There is no standardizing mechanism.

For the complete story on the modern Bristol Dynamaster, write for free 35-page booklet P1245. The Bristol Company, 107 Bristol Road, Waterbury 20, Conn. 3.19

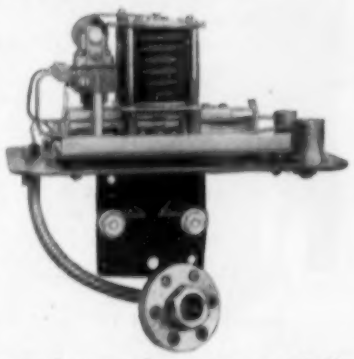
BRISTOL *THE DEPENDABLE GUIDEPOST OF INDUSTRY*

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

If you write maker identify as **IEN - 5799**

SHORT RANGE SPANS, HIGHLY SENSITIVE

The Taylor TRANSAIRE* Pressure Transmitter!



Designed to measure and transmit pressure changes up to 1,000 ft., it is accurate to ½% of the selected short range span and sensitive to pressure changes of ½" water.

• *Short range spans available 20 to 40 psi. throughout range limit of 35 to 415 psia, and 50 to 100 psi. throughout 100 to 1,000 psia.*

• *Suppressed ranges throughout pressure limits.*

• *Volumetric type pressure system is extremely accurate, practically clog-proof, has corrosion resistant 316 stainless steel diaphragm.*

• *Temperature and barometric compensation for higher accuracy of measurement and control.*

Ask your Taylor Field Engineer, or write for **Bulletin 98097.** Taylor Instrument Companies, Rochester, N. Y., and Toronto, Canada. *Instruments for indicating, recording and controlling temperature, pressure, flow, liquid level, speed, density, load and humidity.* *Reg. U. S. Pat. Off.

TAYLOR INSTRUMENTS MEAN ACCURACY FIRST

If you write maker identify as **IEN - 5794**

NEW! ALEXANDER Multi-Flex

LEATHER BACK-UP PADS for Rotary Disc Sanders

Slash Sanding Costs!

For the first time . . . a *leather* back-up pad that is perfectly balanced for high speed operation (Patents Pending), and available in any degree of flexibility. Only leather provides the resilience to give such fast cutting action and such long life. Economical, too, because pad can be renewed by replacing the leather alone. Send for descriptive literature.

ALEXANDER BROTHERS BELTING CO.
406 N. 3rd Street Philadelphia 23, Pa.

The Back-Up Pad That Can Be Renewed by Replacing the Leather Alone

If you write maker identify as **IEN - 5797**

MEYERCORD *Nameplate* **DECALS** *Laboratory Engineered* FOR EVERY SURFACE AND FINISH

Meyercord Decal Engineers and Designers Can Help You Lick that Tough Problem

If you want to ADVERTISE . . . INSTRUCT . . . or IDENTIFY on any surface from smooth, non-porous plastics to rough, pebbly materials, Meyercord engineers will come up with the answer in a hurry. We dipped into our recent orders and highlight below a few "case histories" where Meyercord Decals have been engineered for extremely difficult conditions:

AIRCRAFT INDUSTRY—Meyercord engineers developed a special identification decal for jet aircraft capable of withstanding temperatures to 900° as well as the effects of aeromatic fuels and hydraulic fluids.

ELECTRONICS INDUSTRY—A leading electronics manufacturer required a schematic diagram which could be folded compactly and placed inside communication sets. Meyercord solved the problem with a special decal applied to nylon fabric under heat and pressure.

HOME APPLIANCES—Meyercord engineers developed a new type of open-letter decal providing high color and dramatic effect—at less than one third the cost of discarded metal name plates.

MEYERCORD DECAL NAMEPLATE MANUAL and Full Information FREE

Meyercord "Mark-it" Manual shows hundreds of uses for durable, washable, decal nameplates . . . as trade marks, instructions, charts or diagrams . . . This manual is FREE . . . but request it on company letterhead, please.

THE MEYERCORD CO. *World's Largest Decalcomania Manufacturer*
DEPT. T-315 5323 WEST LAKE ST. CHICAGO 44, ILLINOIS

If you write maker identify as **IEN - 5800**

New ½" DRILL

Heavy-duty power (6 amp motor) **at standard-duty price . . . Only $60.** **Model 516**

— the most powerful cutting action of all heavy-duty drills in its price class — actually 45% to 68% greater staying power on toughest drilling jobs.

• Precision ball bearings throughout, and Helical 1st-stage gearing minimize friction and power loss.

• Removable, adjustable spade handle and 2-position auxiliary handle allow greater pressure in confined work areas.

• Weighs only 10 lbs.

ALSO NEW: Model 515 heavy duty ¼" Drill: 3 amp motor, ball bearings throughout, weighs 3¾ lbs., $44.50. Write for complete details and name of nearest dealer.

Porter-Cable *Quality Electric Tools*

PORTER-CABLE MACHINE CO.
2205 N. Salina St., Syracuse 8, N. Y.

If you write maker identify as **IEN - 5801**

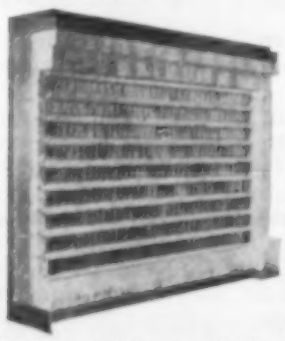
A GUARANTEED HEAT SOURCE, *Easily Installed*

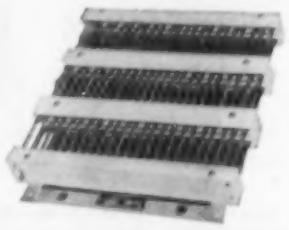
"FOLDED-and-FORMED" Heating Elements

are quickly, easily installed in furnaces, ovens, kettles, etc., to assure a heat source unequalled for quick rise to temperature; long-life efficiency; low-cost maintenance and repairs.

STANDARD RACKS

Size 12" x 12". Installed—vertically or horizontally, side-by-side, end-to-end, or in banks, to meet K. W. requirements. Five-year guarantee, at temperatures to 750° F. or 1350° F.





CUSTOMBUILT RACKS

Available in wide range of sizes and combinations, to fit any flat or curved area, to provide maximum K. W. at temperatures to 1850° F.

Hundreds of different applications are demonstrating the outstanding efficiency and economy of "F-and-F" Heating Elements. You, too, can use them *profitably!*

TREN INC.
Electrically Heated Industrial Equipment
247 LEVERINGTON AVE., PHILA. 27, PA.

If you write maker identify as **IEN - 5802**

REPAIR CONCRETE PLANT FLOORS by SAWING BEFORE BREAKING

. . . with a **Clipper CONSAW**

Save up to 50% in labor and material. Saw repair patches—saw gas, water, conduit, and air line trenches in floors, runways and streets. Stops cracking and spalling—stops high maintenance costs.

. . . It's Yours on **FREE TRIAL**

Our Only Business for Nearly **20 YEARS . . . MASONRY and CONCRETE SAWING!**

The unqualified Clipper guarantee of satisfaction is backed by world-wide experience, the ability to select the finest materials and the "know how" to put them together

. . . by the **MASONRY SAW Originators**

Every shape and size refractory **cut in seconds!** Perfect fitting reline jobs that last longer—cost less. A Clipper Model to fit any job—any budget. SOLD ON FREE TRIAL

MODEL HD — 15 MODELS PRICED FROM $265

SAME DAY SERVICE FROM YOUR NEAREST FACTORY BRANCH —SEE BELOW

CLIPPER SUPERIOR DIAMOND BLADES

. . . guaranteed to . . . "Consistently Provide the fastest cut at the lowest cost . . . with the greatest ease!" Clipper alone can supply every necessary metal bond . . . in over 36 specifications.

Clipper MANUFACTURING CO.
NATION WIDE DIRECT FACTORY SERVICE

- CINCINNATI
- BOSTON
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- HOUSTON
- AUSTIN, TEXAS
- SAN FRANCISCO
- ATLANTA
- DETROIT
- PITTSBURGH
- NEW YORK
- BIRMINGHAM
- DENVER
- LOS ANGELES
- INDIANAPOLIS
- ST. PAUL
- MILWAUKEE
- DALLAS

IN CANADA - P.O. BOX 476, WINDSOR, ONTARIO

TEAR OUT AND MAIL !

CLIPPER MANUFACTURING CO.
11 E. 28th Street • Kansas City 8, Mo.

Send FREE Literature and Prices on: 17C-1

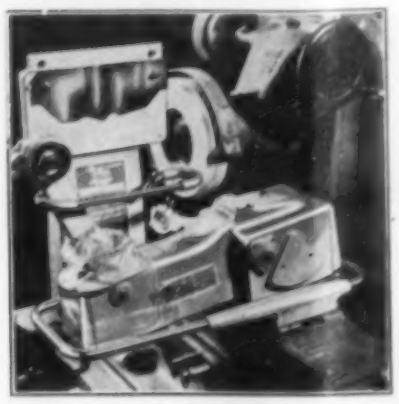
☐ CLIPPER CONSAWS ☐ CONSAW DEMONSTRATION
☐ CLIPPER MASONRY SAWS ☐ CLIPPER DIAMOND BLADES

COMPANY _____
ADDRESS _____
CITY _____ STATE _____

If you write maker identify as **IEN - 5804**

GRINDING . . Dresser attachment forms wheel to a magnified template

Source: **PRATT & WHITNEY**
Charter Oak Blvd., Dept. IEN, West Hartford 1, Conn.



Bulletin, "Diaform"

Wheels to 14 in. in diameter, to grind dies, punches, flat or circular forming tools, can be dressed with this new Model-2 Diaform attachment. It is similar in design to the Model 4, previously described IEN-5742-52. It will dress wheels to 2 in. in width, with contour depth to 1 in., in one setting. It follows a magnified template to guide a truing diamond across the face of the grinding wheel on a 5 to 1 reduction ratio.

The attachment can be positioned on a magnetic chuck on a grinding machine or can be secured to the machine table. It mounts two diamonds in tandem, one to rough and the other to finish the wheel contour. A centering gage is provided to center each diamond in turn under the grinding wheel. Right and left hand assemblies are available. The template can be cut from a steel plate. Guards prevent over-travel.

If you write maker identify as **IEN - 5805**

HEATING . . Gas fired space unit employs two fans, rates 250,000 btu.

Source: **REZNOR MFG. CO.**
300 James St., Dept. IEN, Mercer, Pa.

Belt connected

Air capacity in this new double-fan gas fired heater is 3,200 cfm. Air throw is to 83 feet. The two fans are mounted side by side for effective air distribution at a low noise level. Both are connected to one ¼-hp. motor. The fan arrangement permits assembly in a housing measuring 33½ in. in height. Width is 36 in. and depth is 24⅝ inches.

The burner is assembled from the back to the front, rather than from one side to the other, and the access panel to the pilot and the burner is across the back. A swing-down panel provides access through the bottom.

If you write maker identify as **IEN - 5806**

Electric contacts are cleaned and lubricated by a new chemical packaged in 6-oz. pressurized containers at a dealers' net list of $1. Spra-Kleen No. 8666 is the designation. Just direct the nozzle at the contact, press a button and the contact will be clean and lubricated. General Cement Mfg. Co., 919 Taylor Ave., Dept. IEN, Rockford, Ill.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 5807**

Break Loading Bottlenecks!

With **MagLiner MAGNESIUM DOCK BOARDS**

Magnesium Light!
Magnesium Strong!
Magnesium Safe!

Write today for your copy of Magliner Bulletin DB-204

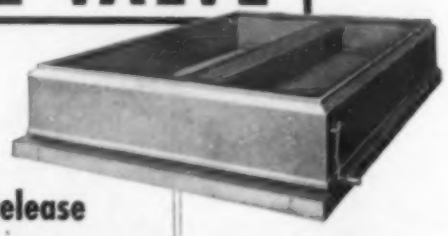
Have you considered the advantages of equipping your docks with Magliner magnesium dock boards? Are you aware of the many benefits awaiting you? *Reduced loading costs! Easier handling! Greater speed and efficiency in shipping-receiving operations!* In the case illustrated above, the manufacturer took positive steps to insure against the penalty of loading bottlenecks . . . he investigated and installed Magliner magnesium dock boards! What about you? It costs nothing to get the facts! It can keep you steps ahead of the competition!

MAGLINE, INC.
P. O. BOX 405, PINCONNING, MICH.

If you write maker identify as **IEN - 5808**

Now.. Swartwout FIRE VALVE

opens in seconds



for quick release of heat, smoke, gases in case of fire

New Aid for Limiting Fire Spread

Fire Valve provides unobstructed opening whenever under-roof temperature reaches a predetermined point. Each unit supplies 46 sq. ft. of free area opening when the two dampers drop, released by a fusible link. Can also be opened by emergency pull chain. Units are only 21 in. high. Permit fighting fire from roof. Fire Valve serves as extra ventilation when needed, in good weather. It's weatherproof when closed and can be insulated to reduce heat loss. Write for additional information.

18511 Euclid Avenue, Cleveland 12, Ohio
The **Swartwout Co.**
Roof Ventilators and Ventilating Louvers
POWER PLANT EQUIPMENT • PROCESS INDUSTRY CONTROLS

If you write maker identify as **IEN - 5809**

proved protection of air equipment with NORGREN filters

Here's a typical example of why it is essential to filter the air that powers your tools, cylinders, and other pneumatic equipment—if you want best equipment performance and low maintenance costs.

Norgren Filters give you this vital protection. Performance data prove their high efficiency in water removal...and at 80 psi line pressure and flow of 100 cfm, pressure drop across filter is only ½ psi.

WRITE FOR NEW CATALOG No. 600

C. A. Norgren CO.
3432 So. Elati, Englewood, Colo.

PIONEER AND LEADER IN OIL-FOG LUBRICATION FOR 26 YEARS

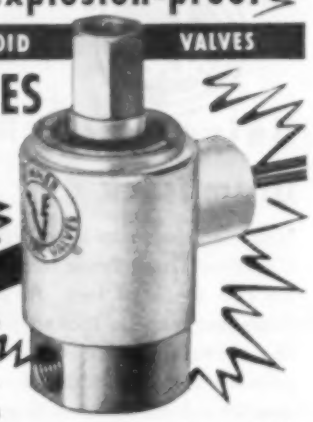
• VALVES • FILTERS • REGULATORS
• LUBRICATORS • HOSE ASSEMBLIES

If you write maker identify as IEN - 5811

SKINNER explosion-proof

STAINLESS STEEL SOLENOID VALVES

SAFETY X5 SERIES



Underwriters Approved for Class 1, Group D, Hazardous Locations — flammable gases or vapors — (Refineries, Pipe Lines, etc.)

INEXPENSIVE

Simple, extremely flexible design makes Skinner X5 Series valves *the most versatile explosion-proof valves on the market!*

X5 Series Valves are competently engineered to give trouble-free operation through millions of cycles. They are direct acting, leakproof and spring loaded for positive operation in any position. Available in a broad selection of types, voltages, pressures, flow control adjustments, port sizes and port locations.

SPECIFICATIONS: Type: Two- and Three-Way Normally Open, Normally Closed, and Directional Control; Pressure Range: 0-1000 p.s.i. Orifice Diameters: 3/64" to 1/4". Pipe Size: 1/8" or 1/4" NPT; Voltage: All AC and DC; Duty Cycle: Continuous or Intermittent. Write for BULLETIN 526A

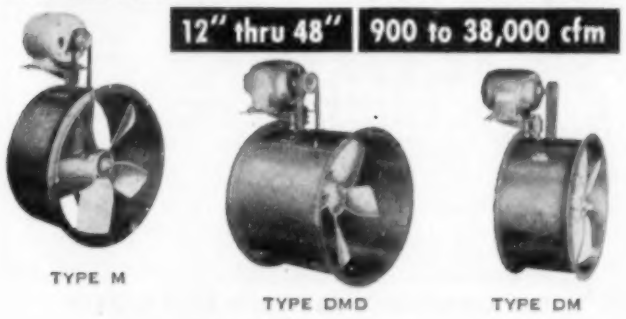
Skinner ELECTRIC VALVE DIV.
THE SKINNER CHUCK COMPANY
110 Edgewood Ave., New Britain, Conn.

If you write maker identify as IEN - 5812

Exhaust Units

FOR GENERAL USE and HAZARDOUS LOCATIONS

12" thru 48" | 900 to 38,000 cfm



TYPE M — TYPE DMD — TYPE DM

Engineered for paint spray booths, ovens, dryers, hoppers, open surface tanks, swing sanders and grinders, laboratory hoods, polishing booths, down draft tables, grills, ranges, garage service pits, tumblers, planers, chipping tables, foundry shakeouts, etc.

WRITE FOR FREE FAN DATA-LOG
Shows at a glance how to handle practically any ventilation problem. Covers exhaust units, fan window mounting units, roof ventilators, shutters, weather canopies.

M & E MANUFACTURING COMPANY
2619 Winthrop Avenue
Indianapolis 5, Indiana

If you write maker identify as IEN - 5813

HOW GOOD CAN AN ELECTRIC HAND SAW BE?

Cuts inside holes without drilling a starting hole.

TRY **LESTO** AND SEE

RIP
SCROLL
BAND
JIG
CROSSCUT
COPING
KEYHOLE

Extremely fast for soft and hard wood, soft metal, bone, plastics, hard rubber, cement sheet, pressed wood, etc.

Cuts 2" Wood Beams

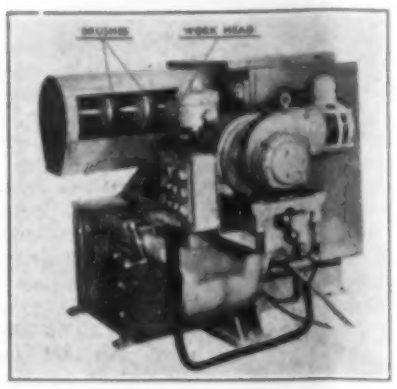
Write for Literature
Sold and Serviced in Principal Cities Throughout U.S.A.

VICTOR J. KRIEG, Inc.
Exclusive Importer
Dept. A, 611 Broadway, New York 12, N. Y., GRamercy 7-5757

If you write maker identify as IEN - 5814

BURRING . . Rotary brush machine cleans work weighing to 100 pounds

Source: OSBORN MFG. CO.
5401 Hamilton Ave., Dept. IEN, Cleveland 14, Ohio



Brushamatic 4-L3

Burrs are removed and adjoining surfaces are blended by the action of one or more brushes mounted on a horizontal motor driven spindle in this new machine. Work, such as a gear, is mounted on a second spindle forming part of a motor driven head, it can be positioned through 180 deg. in both vertical and angular directions and can be moved in and out or parallel to the axis of the brush spindle on slideways.

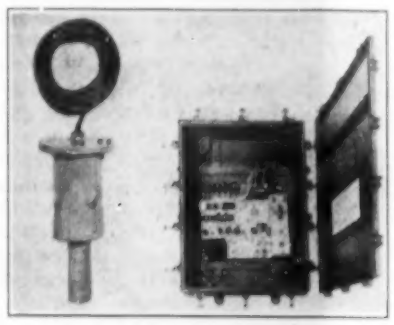
The brush spindle is driven by a 5-hp. reversing motor at 1,750 rpm. An air operated brake will stop this spindle for reversal, to a maximum of four reversals per minute. The head spindle operates at 30 rpm. with its 3/4-hp. geared head motor. The head reciprocates 7 in. for loading and unloading. It can be adjusted 9 in. in transverse direction, 10 in. for infeed and 6 in. vertically.

Control centers at a housing at the operator's position. Following set-up, the operator's activities are concentrated on loading and initiating the cycle. The machine maintains its cycle of approach, brush and retraction automatically.

If you write maker identify as IEN - 5815

CONTROL . . Electronic equipment to regulate level of dry materials

Source: HEWITT-ROBINS INCORPORATED
666 Glenbrook Road, Dept. IEN, Stamford, Conn.



All parts are static

Robintronic Level Indicator is a new assembly of steel enclosed capacitance probe and electronic amplifying and control equipment. It provides a signal that can be employed for indication or control of the level of dry materials stored in a bin, silo, tank. The probe is positioned at the top or bottom limiting points in the storage unit, or at both of these points, with shielded cable connection back to the control housing. It can be located at a considerable distance from the storage unit.

Rise or fall of the material, to envelope or uncover the probe, changes balance in the capacitance circuit. This change is amplified and employed for the indicating or control action. The probe can be mounted on a pipe at a desired level or can be suspended from above. Examples of materials whose level can be controlled are coal, chemicals, grain, gravel, sand, ore. Cost of a single standard unit is about $300.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5816

Moving packaged drugs from floor to floor on Ferguson roller and belt conveyors.

MAKE YOUR MOVES ON Ferguson Conveyors

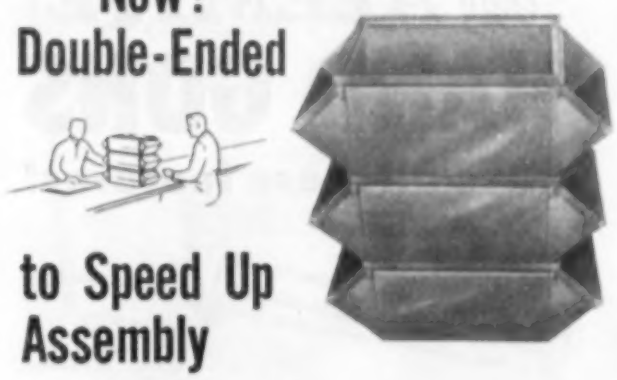
You have parts, products, packages to move . . . from floor to floor . . . department to department . . . one end of a line to another. What's the best way to do these jobs? On Ferguson Conveyors. They're custom engineered to fit the need . . . to save handling . . . to speed assembly, packaging, shipping. Every day, users in all types of industries everywhere get more efficient materials handling at lower operating costs with Ferguson Conveyors.

***Write, wire or call us today** with your materials handling problem and for facts and figures on Ferguson belt, roller and wheel conveyors.*

HARRY J. ferguson COMPANY
125 WEST AVE., JENKINTOWN, PA.
OGontz 4401

If you write maker identify as IEN - 5817

Now! Double-Ended to Speed Up Assembly



New Double-Ended hopper front STACKBINS® serve two operators on assembly lines — supply operators on two adjacent machines — will simplify supply problems and work station layouts!

Double-Ended STACKBINS nest firmly into tiers for efficient use of floor space, or can be stored like drawers in STACKRACKS® for assembly, production or storage. Their double-utility saves costly floor space and containers. Interstack with regular STACKBINS of same size.

SEND FOR CATALOG TODAY!
Write Stackbin Corp., 1077 Main St., Pawtucket, R. I.

Mfgd. and sold in Canada exclusively by Wickware-Stackbin, Ltd. Ottawa

STACKBIN® SYSTEM
"Stacked and Still Accessible"

If you write maker identify as IEN - 5818

AGASTAT

Compact . . . Dust-Proof

TIME DELAY RELAYS

solenoid actuated—pneumatically timed

Introduces time delays into a-c or d-c circuits. Easily adjusted to provide delays ranging from 0.1 second to five or more minutes.

The AGASTAT is small, light, and operates in any position. Dust-proof timing chamber assures long operating life with a minimum of maintenance.

Write for Bulletin. Dept. A1-52,

AGA

Division of Elastic Stop Nut Corporation of America
1027 Newark Avenue, Elizabeth 3, New Jersey

If you write maker identify as IEN - 5819

NOT THIS... BUT THIS

Now . . . for a good shower

—deep freeze!

—scalding hot!

BANISH "BOOBY TRAP" SHOWERS

Use POWERS THERMOSTATIC Water Mixers

Real comfort and safety. No waste of time or hot and cold water.

POWERS THERMOSTATIC WATER MIXERS

—eliminate shower accidents

They are completely automatic, hold shower temperature wherever you want it regardless of **pressure** or **temperature** changes in water supply lines. Failure of cold water instantly shuts off the shower.

Tests prove Powers is safest shower regulator made for factories, schools, hospitals, hotels and clubs. Thousands now in use.

Used for Many Industrial Processes. Users report control within 1/2° F. Temperature Ranges: 65-115° F., 60-125° F., 75-175° F. Write for Bulletin 365. (b13)

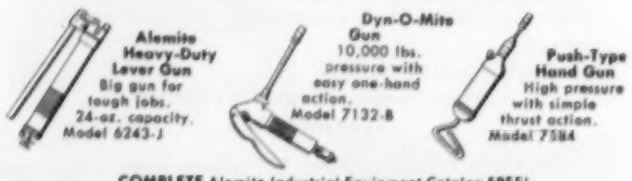
THE POWERS REGULATOR CO.
Skokie, Ill. • Offices in Over 50 Cities • Est. 1891

If you write maker identify as IEN - 5820

Only ALEMITE HAND GUNS have all these features!

Alemite Lever-Type Grease Gun
High pressure — rugged. 1-lb. capacity. Model 1056-SE

- High pressure pistons of hardened steel, machined to exact tolerances!
- All parts precision fit for longer life, easier operation.
- Long operating handles with heavy steel linkage.
- All available with fittings for automatic loading.
- Built for easy servicing — built-in ball checks easy to clean.



Alemite Heavy-Duty Lever Gun — Big gun for tough jobs. 24-oz. capacity. Model 6243-J

Dyn-O-Mite Gun — 10,000 lbs. pressure with easy one-hand action. Model 7132-B

Push-Type Hand Gun — High pressure with simple thrust action. Model 7584

COMPLETE Alemite Industrial Equipment Catalog FREE! Send for your copy today. Write: Alemite, Dept. K-54, 1850 Diversey Parkway, Chicago 14, Ill.

ALEMITE

If you write maker identify as IEN - 5821

RIGHT DOWN TO THE SMALLEST SIZE

Every BOKUM BORING TOOL conforms to a uniform design characteristic of the Bokum line . . . recognized throughout industry for its unmatched quality.

This cutting head style A for through-boring

This cutting head style B for bottoming and facing

This cutting head style C for internal threading

For top performance you can always depend on BOKUM ORIGINAL BORING TOOLS

Available in both high speed steel, carbide-tipped, and solid carbide.

Two basic formulas contribute to the outstanding performance of Bokum Tools: 1) the mathematical formula of the design and 2) that of the material.

Use a Bokum Tool and you'll see the difference —Send for catalog.

WRITE TO DEPT. N FOR CATALOG

BOKUM TOOL COMPANY • 14775 WILDEMERE DETROIT 31, MICHIGAN

If you write maker identify as IEN - 5822

TEMPILSTIKS°

the amazing Crayons that tell temperatures

in
WELDING
FLAME-CUTTING
TEMPERING
FORGING
CASTING
MOLDING
DRAWING
STRAIGHTENING
HEAT-TREATING
IN GENERAL

$2 each — gives up to 2000 readings

it's this simple:
- Select the Tempilstik° for your working temperature.
- Mark your workpiece with it.
- The Tempilstik° will leave a liquid mark as soon as its specified temperature is reached.

Available in these temperatures (°F)						
113	213	313	450	850	1250	1650
125	225	325	500	900	1300	1700
138	238	338	550	950	1350	1750
150	250	350	600	1000	1400	1800
163	263	363	650	1050	1450	1850
175	275	375	700	1100	1500	1900
188	288	388	750	1150	1550	1950
200	300	400	800	1200	1600	2000

Also available in pellet and liquid form.

TEMPIL CORPORATION
Technical Dept., 132 W. 22nd St., New York 11
PLEASE SEND FREE—Tempil "Basic Guide to Ferrous Metallurgy" — 16½" by 21" plastic-laminated wall chart in full color.

NAME _____
COMPANY _____
ADDRESS _____

Visit Booth 144 at the Welding and Allied Industry Exposition, Buffalo, May 5-7

If you write maker identify as IEN - 5823

DRIVE . . Variable speed control to operate dc. motor from ac. line

Source: LOUIS ALLIS COMPANY
427 E. Steward St., Dept. IEN, Milwaukee 7, Wis.

Bulletin 1500

A transformer, electronic control panel, push button station and a special design of adjustable speed dc. motor make up a new variable speed drive in the company's Select-A-Spede line. The equipment is available in standard NEMA frame sizes from ¾ to 15 hp. The transformer and control panel can be mounted in any convenient location with the motor and push button station available in desired enclosure to include open, drip proof, splash proof, totally enclosed or explosion proof.

A fail-safe circuit is provided in the event of tube failure. Current limit control safeguards the driven equipment and the motor against overload, jamming or too rapid acceleration. Speed ranges are from 5 to 100 to 1 under given conditions. Speed regulation is within 0.5 per cent.

If you write maker identify as IEN - 5824

PROTECTING . . Face shield hinges on molded plastic headgear cap

Source: MINE SAFETY APPLIANCES CO.
201 N. Braddock Ave., Dept. IEN, Pittsburgh 8, Pa.

Bulletin 0302-1

The half-cap that forms the headgear of this new Facegard is fitted with a plastic headband, an absorbent foam rubber replaceable sweat band and a gasket along the front edge of its integral visor. The transparent plastic shield hinges down to seal on the visor gasket. It can be raised and held in any position by its friction joint stops. Clear, medium green and wire screen visors are available in 8 in. lengths. The first two can be specified also in 6-in length. The plastic is 0.02 or 0.06 in. in thickness. The former is bound with reinforcing aluminum.

If you write maker identify as IEN - 5825

All vegetation can be destroyed and the soil sterilized to stop regrowth by application of the new Dolge NP Weed Killer. It is supplied as a powder and can be used dry or in solution. It includes a wetting and spreading agent that will wet waxy surfaces of plants and the stems of plant growth. It acts following application and thorough wetting by rain or by artificial means. It is supplied by C. B. Dolge Co., 14 Welton Road, Dept. IEN, Westport, Conn.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5826

Here's how you can cut costs on heat-treating small tools!

furnace - quench tanks - furnace (corner) positioning

furnace - furnace - quench tanks (side-by-side) positioning

furnace - quench tanks - furnace (side-by-side) positioning

The compactness, plus versatility of this Waltz small tool furnace enables you to have heat treating facilities right in your own shop.

This Waltz set-up includes a pre-heat furnace, a high heat furnace and quench tanks in a unit designed for convenient positioning in your shop. Furnace sections equipped with casters. Temperature range permits treatment of all high speed steels including cobalt.

Waltz small tool furnaces are "money makers" in hundreds of shops throughout the country. Why not enjoy the lucrative advantages of heat treating facilities right in your own shop?

A complete line of Waltz standard or special heat treating furnaces, using all types of fuels, are built to suit your requirements. Write Dept. A for comprehensive bulletin.

Waltz FURNACE COMPANY
Symmes Street, Cincinnati, Ohio

If you write maker identify as IEN - 5827

The Colson Universal Drum Truck

Makes LIGHT of Heavy LOADS

Handling drums or barrels the COLSON Universal Drum Truck lets one man do the work of two. Any size container may be locked between the adjustable climb hook and pick-up tips. COLSON'S leverage lift prevents strain. Even heavy loads move easily on the 10" steel disc wheels with cushion rubber tires.

Other time and labor-saving COLSON Materials-Handling equipment includes hand trucks, platform trucks, Lift-Jack systems, and wheels and casters for every industrial application.

Write for Free Catalog on Colson Materials-Handling Equipment

THE COLSON CORPORATION
ELYRIA, OHIO
CASTERS • LIFT-JACKS • INDUSTRIAL TRUCKS

If you write maker identify as IEN - 5828

Quality... WHERE YOU NEED IT MOST

LUNKENHEIMER POP SAFETY AND RELIEF VALVES

Fig. 433 Pop Safety Valve

Fig. 658 Relief Valve

Abnormal overpressures are dangerous — and that's why it pays to insist on Lunkenheimer quality when you specify or buy Pop Safety or Relief Valves for any service. Lunkenheimer design, materials, and workmanship are world-famous for excellence. Their record of performance is unsurpassed.

THE DIFFERENCE BETWEEN POP SAFETY AND RELIEF VALVES

Pop Safety Valves are used with gases, including steam. They pop wide open when the set pressure is reached . . . snap shut when it has dropped.

Relief Valves are used with liquids. They start to open at the set pressure but require about 20% overpressure to open wide. They start to close as soon as pressure drops and shut tight when the set pressure has been reached.

WRITE FOR CIRCULAR 502

The Lunkenheimer Co., Cincinnati 14, Ohio.

LUNKENHEIMER®
THE ONE Great NAME IN VALVES
L-254-3A

If you write maker identify as IEN - 5829

ONE CONTROL DOES THE JOB OF TWO

DA-400

Available with Explosion-Proof or Weatherproof Housing

Mercoid DA-400 Series Pressure Controls incorporate a single bourdon tube which actuates two independently adjustable Mercoid magnet operated mercury switches to accomplish various circuit operations. For example:

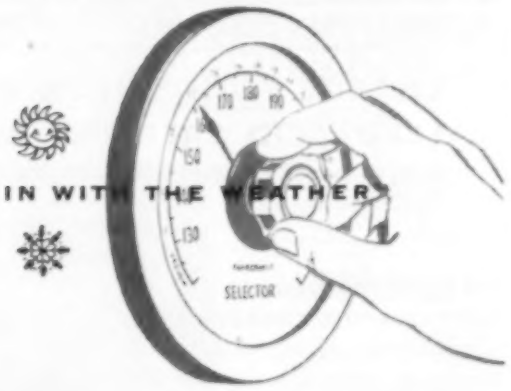
1. Close one alarm circuit at high pressure and another at low pressure with both circuits open over operating range.
2. As an electrical interlock to open one circuit as pressure rises above and the second circuit as the pressure drops below operating range.
3. To provide two-stage control by opening or closing one circuit on a rise in pressure and the second circuit on a further rise in pressure.

Equipped with calibrated dial and outside adjustments—Ranges 0-30 psi to 300-2500 psi—The Mercoid magnet operated mercury switches are not affected by harmful effects of dust, dirt, or corrosion—your assurance of millions of operations.

Write for Bulletin 5P

THE MERCOID CORPORATION
4201 BELMONT AVE. CHICAGO 41, ILLINOIS, U.S.A.

If you write maker identify as IEN - 5830



illinois Selectotherm

Investigate this modern development in automatically controlled heating!—a high vacuum steam heating system with "single dial control" that assures the ultimate in comfort, economy and convenience. Heat supply is balanced against heat loss to provide an even and constant warmth that is always exactly right.

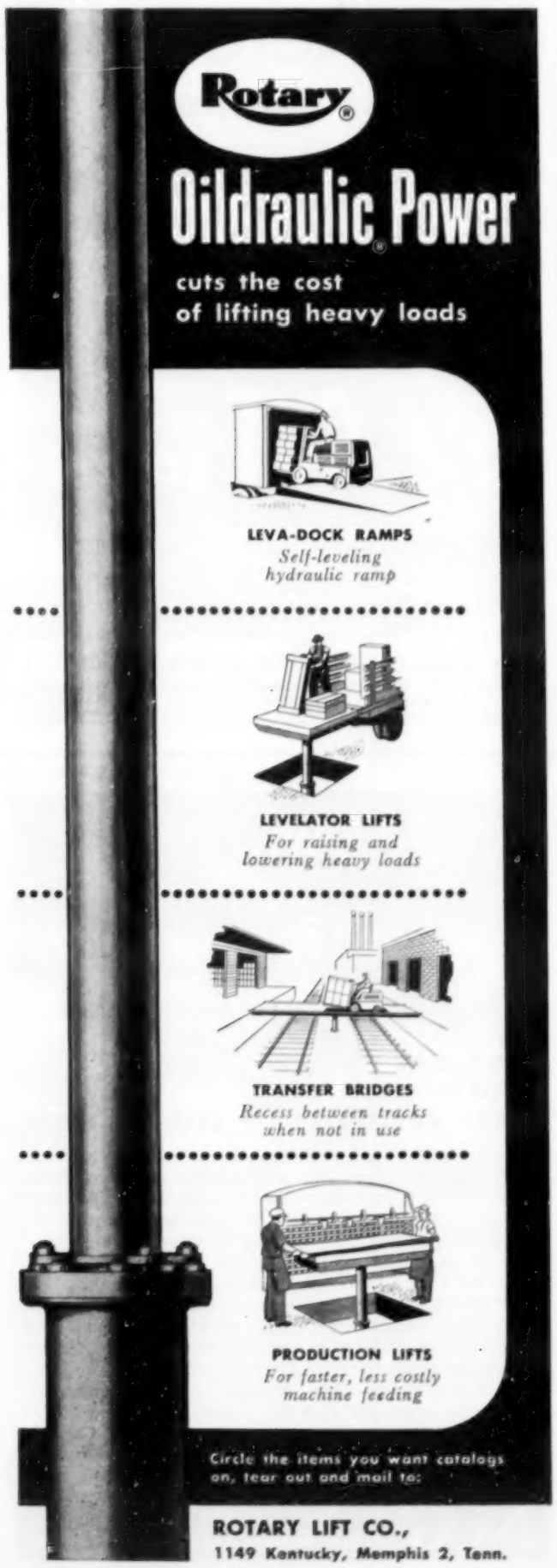
Ideal for schools, hospitals, churches, apartments, commercial and public buildings *of any size*—either new or existing—where boilers are used for low pressure steam heating only—with any type of fuel and any form of mechanical firing device.

Write for Bulletin 540 and learn how Selectotherm reduces fuel consumption and saves 20% or more compared to ordinary systems.

ILLINOIS ENGINEERING COMPANY
2037 SOUTH RACINE AVENUE
CHICAGO 8, ILLINOIS

DIVISION OF AMERICAN AIR FILTER COMPANY, INC.

If you write maker identify as IEN - 5831

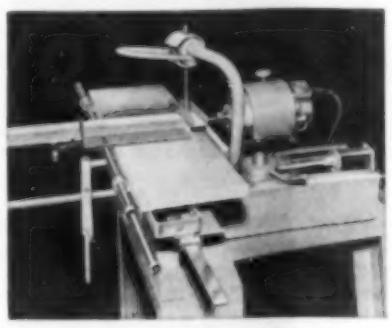


ROTARY LIFT CO.,
1149 Kentucky, Memphis 2, Tenn.

If you write maker identify as IEN - 5833

WOOD WORKING . . Routing machine to cut joints for wood assemblies

Source: J. D. WALLACE & COMPANY
134 S. California Ave., Dept. IEN, Chicago 12, Ill.



Details on request

A motor rating ⅓ hp., for operation at 1,750 rpm., or one rating 1¼ hp. for 22,000 rpm. mounts in a vertically adjustable cradle at the rear of this new Routiser machine. The motor is provided with 2 in. of vertical adjustment. It rides on a pair of hardened and ground cylindrical ways for 4 in. of horizontal movement at right angles to the work table at the front.

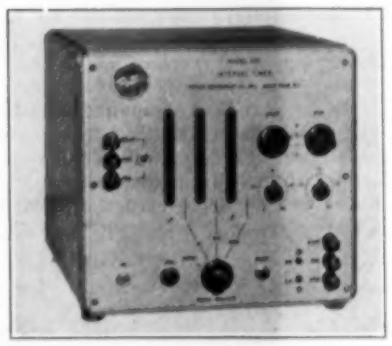
The table is provided with 12 in. of movement at right angles to the movement of the motor. Graduated scales and stops are included to set the machine up for given work. The work itself is located on the table beneath a cam operated clamp which provides adjusting means to take material to 4 in. in thickness or height.

The machine performs the work of a mortiser and tenoner or a dowel borer. It will make right and left hand cuts alternately from one set up. List price is $293 complete with the 1¼-hp. motor and with ¼ and ½-in. collets but without the floor stand. The list is $237 with the ⅓-hp. motor for boring only. This assembly includes a $\frac{1}{16}$-in. threaded chuck. It does not include the floor stand.

If you write maker identify as IEN - 5834

TIMING . . Electronic instrument designed to measure short intervals

Source: POTTER INSTRUMENT CO.
115 Cutter Mill Road, Dept. IEN, Great Neck, N. Y.



Lightning fast

Electric relays can be production tested for performance by application of this new Model 432 electronic interval timer. It will read the time between application of power to the relay coil and actual contact closing or opening. It will count the number of bounces that a set of contacts makes upon closing. Counts are indicated by neon lamps that show through transparent numbers, ranging from 0 to 9, in the three vertical columns, one column for each digit.

The instrument can be set for counting or for interval measurement in three ranges. These are 0.01 to 9.99 milliseconds, 0.1 to 99.9 milliseconds and 1 to 999 milliseconds. The instrument also can be employed as a high speed totalizing counter with capacity to 999 and as a secondary frequency standard with outputs of 100, 10, 1 kc. and 100, 10, 1 cps.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5835

★ in wires—cables—bus bars—fuses

measure current quickly

Both AC and DC

COLUMBIA

TONG TEST

- Only Tong Test can measure both AC and DC by snapping tongs around electrical conductor. Readings are taken instantly and accurately without breaking circuit or insulation.
- Interchangeable scale ranges up to 1000 amperes AC or DC.

AMMETER

- Safe, convenient, light weight. Cannot burn out as there are no windings.
- Voltage readings up to 600 volts AC or DC with the Voltor attachment.
- Five types to accommodate cables up to 3⅞", bus bars up to 4½" x ½".

Write for Tong Test Bulletin IQ-400

COLUMBIA ELECTRIC MFG. CO. 4519 HAMILTON AVE. CLEVELAND 14, OHIO

If you write maker identify as IEN - 5836

"BUFFALO" TYPE "RR" PUMP FOR CLEAR WATER SERVICE

If you want a pump for general service or boiler feed, look into the rugged "RR"! You'll like its modest first cost, its high efficiency (even at heads up to 1500'), its easy maintenance—but most of all, you'll like its year-after-year endurance. That's the true money-saver in a pump! Better write for Bulletin 980 now and see why so many "Buffalo" users are enthusiastic. Pick your capacity, 2 and 4-stage models, up to 900 gpm.

BUFFALO PUMPS, INC.
496 Broadway Buffalo, New York
Subsidiary of Buffalo Forge Company
Canadian Pumps Ltd., Kitchener, Ont.
Sales Representatives in all Principal Cities

If you write maker identify as IEN - 5837

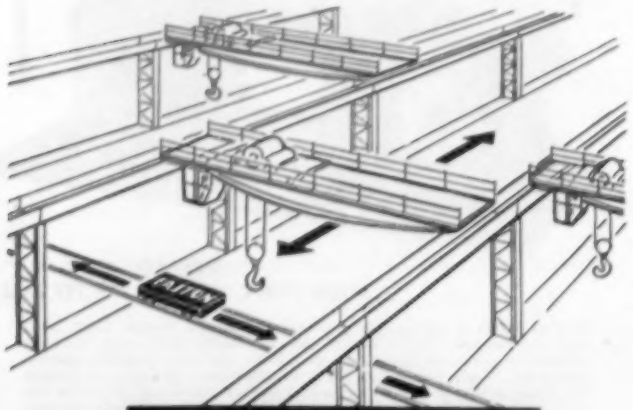
If you write maker identify as IEN - 5838

If you write maker identify as IEN - 5839

Cross-Bay Transfer

TRADE MARK

Automatic motor driven transfer cars provide a universal handling system in modern parallel bay plants now served by overhead cranes. Also for transfer between plant buildings.



A-1040

EASTON

EASTON CAR & CONSTRUCTION CO. • EASTON, PA.

If you write maker identify as IEN - 5840

PneuBin saved $24,000.00 per year on a total investment of $1460!

Savings on time, labor and uninterrupted production flow amounts to $2,000.00 per month for one PneuBin customer.

Here's the proof that PneuBin can save money for its users. By eliminating material stoppages in bins and hoppers, this PneuBin installation is piling up huge savings for its owner. Read this excerpt from a letter* received by the general sales manager at PneuBin:

"... we wish to advise you that we have benefited by the installation of the PneuBin, not only through savings in labor and material, but more important by uninterrupted production, for which we estimate at a total of $2,000.00 monthly savings.
In view of the excellent results, we have recommended the PneuBin to our Central Engineering Department for installation wherever similar difficulties are encountered."

*Complete letter on request.

How would you like to have an annual return of 1643% on a $1460 investment?

Take a tip from this company who has solved its flow stoppage problems with PneuBin. Let a PneuBin engineer show you how your company can effect big savings by decreasing your material flow problems.

PneuBin is designed to alleviate flow stoppage problems in your bins through the principle of "positive displacement." PneuBin moves the bin contents . . . not the bin. PneuBin neoprene panels, mounted on the inside walls of the bin, operating off the plant air supply, will eliminate rat holing, bridging, caking or high-viscosity hang-up.

Send for FREE literature and "Flow Stoppage Report." PneuBin engineers will make recommendations with no obligation on your part.

PneuBin is a product of **GEROTOR MAY CORPORATION** Baltimore 3, Md.

Manufacturers of Gerotor Hydraulic Pumps and Motors.

If you write maker identify as IEN - 5841

Here are *some* of the reasons this new heavy duty model offers you more per truck dollar invested:

LOW OPERATING COSTS—electric power costs only pennies per day. No fumes. No vulnerable clutch.

EASIER MAINTENANCE—all parts instantly accessible for faster lubrication or inspection.

COMPACT—97" overall length (less forks). 83" high uprights provide 110" lift on standard model.

EASY STEERING due to articulating caster-type trailing axle. 61" wheelbase. Turns in 83" intersecting aisles with 42" forks.

SEND FOR FULL DATA on this newest model of E-P "Air Rights" Fork Trucks. This line includes 8 models in increments of 1000 lbs. between 2000 and 10,000 lbs. capacity. The Elwell-Parker Electric Co., 4062 St. Clair Avenue, Cleveland 3, Ohio.

If you write maker identify as IEN - 5842

TESTING . . Conductivity cell detects acids and salts in solution

Source: FOXBORO COMPANY
42 Neponset Ave., Dept. IEN, Foxboro, Mass.

For process use

New series of electrolytic conductivity cells has been developed, for use with the Dynalog conductivity instrument, to determine the concentration of acids, bases and salts in solution. Two types are available for insertion in pipe lines or tanks. One is plain, as shown in the illustration. The other includes a valve and fittings so the cell can be removed under pressure without interrupting a process. The electrodes are carbon. They can be cleaned chemically or wiped with a cloth or brush.

The conductivity instrument employs a Wheatstone bridge circuit to measure the resistance across the cell electrodes and to read in terms of given concentration. The company has prepared technical information Sheets 27-H-60A presenting detail illustrations and description.

If you write maker identify as IEN - 5843

ENGINE . . Four cycle gasoline, air-cooled, 26.8 hp. at 3,600 rpm.

Source: KOHLER COMPANY
1230 High St., Dept. IEN, Kohler, Wis.

For steady duty

Electric starting equipment including a motor, generator, ignition switch and starter button, for operation on a 6-volt battery, is now available on the Type K660 four-cycle two-cylinder gasoline engine, previously described IEN-12540-53. The engine employs opposed cylinders enclosed in an air directing hood. Rating is 26.8 hp. at 3,600 rpm., 15 hp. at 1,800 rpm.

Standard equipment includes an impulse coupling magneto, a silencer type muffler, valve rotators, automotive diaphragm type fuel pump, oil bath cleaner and an oil pressure gage. The engine governor is set for operation at 3,000 rpm. standard.

If you write maker identify as IEN - 5844

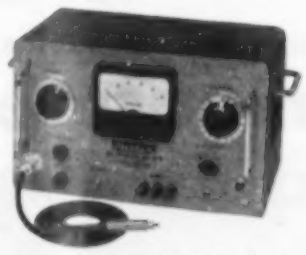
Aluminum pipe, 6 in. in diameter, can be joined by a new gas shielded arc welding machine. An experimental model of the special machine has been built by Air Reduction Sales Co., 60 E. 42nd St., Dept. IEN, New York 17, N. Y. The company emphasizes that it is not producing additional units at the present time. A consumable aluminum wire is fed by guide rollers from the reel to the welding nozzle where the wire, the weld and the base metal are protected against oxidation by a shield of inert gas. The experimental machine was made of cast aluminum and weighs about 200 pounds. It measures 4 ft. in diameter by 2½ ft. in width. It is lifted into place on a pipe line. It will weld pipe measuring 4, 6 or 8 in. in outside diameter with wall thickness of ⅛ to ¼ inch.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5845

Fielden PROXIMITY METER

CAPACITANCE GAUGE



- *Precision testing of concentricity, thickness micrometry of production samples, finishes, insulation, strain and torque measurement; also dielectric analysis of gases, liquids or solids.*
- *No contact with specimen or sample is necessary.*
- *Broad versatility for both static and dynamic testing.*
- *High stability for either long or short test periods. Sensitivity exceeds 0.01 mfd.*
- *Frequency response flat within ± 1db from 100 to 20,000 CPS.*

The Fielden Proximity Meter-Capacitance Gauge provides a new, highly accurate means of measuring, comparing, or monitoring dimensions and distortions impossible to attain by mechanical means now available. For example, variations of 0.01 of a micro-inch are easily detected. Wear or damage to either electrode gauging head or sample is impossible, since no physical contact is made with the specimen. Applications are extremely broad. They range from dielectric analysis of moisture, composition, or contamination—to concentricity comparisons of turbine shafts—or biological specimen studies in the laboratory. For further data on this unusual instrument write today to Dept. E.

Robertshaw-Fulton

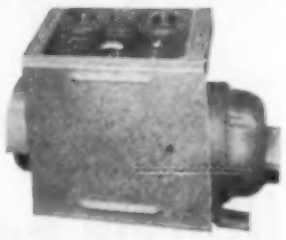
CONTROLS COMPANY

FIELDEN INSTRUMENT DIVISION
2920 N. 4th St., Philadelphia 33, Pa.

If you write maker identify as IEN - 5846

ATTENTION: ELECTRIC TRUCK USERS

CHARGE BOTH EDISON AND LEAD-ACID BATTERIES WITH ONE MULTI-PURPOSE CHARGER



THE *NEW* HERTNER Model UX-2 MULTI-PURPOSE CHARGER simplifies charging problems and reduces costs. It permits standardization in charger facilities. Now it is possible to replace specific-purpose chargers with fewer Multi-Purpose Chargers. This charger can be converted quickly and easily from charging Edison batteries to lead-acid batteries, and back again. Ease of conversion also applies to changing from one size of battery to another—both lead-acid and Edison types. All of the latest features of automatic control and protective devices are found in this newest Charg-O-Matic unit.

For full details and specifications write for Bulletin 210

IMMEDIATE DELIVERY

LOOK TO HERTNER FOR THE LATEST IN BATTERY CHARGERS

THE HERTNER ELECTRIC COMPANY
12690 ELMWOOD AVENUE . . . CLEVELAND 11, OHIO
A General Precision Equipment Corporation Subsidiary

MOTORS • MOTOR GENERATORS • GENERATOR SETS

If you write maker identify as IEN - 5847

Aeroquip

REG. TRADE MARK

HOSE AND FITTINGS

matched for guaranteed performance

A small supply of Aeroquip Bulk Hose and Fittings assures quick hose line replacements at all times. Aeroquip Fittings are detachable and may be used again and again.

AEROQUIP CORPORATION, JACKSON, MICHIGAN

FLEXIBLE HOSE LINES • DETACHABLE, REUSABLE FITTINGS • SELF-SEALING COUPLINGS • BREAKAWAY COUPLINGS • HYDRAULISCOPE

AEROQUIP PRODUCTS ARE FULLY PROTECTED BY PATENTS IN U.S.A. AND ABROAD

If you write maker identify as IEN - 5848

TWO-WAY PROTECTION THAT MULTIPLIES TIP LIFE 2-3 TIMES

Torchweld "75" Cutting Torch features add up to better performance, longer life, and reduced operating costs. And now here's a feature that increases Torchweld value again. "75" Cutting Tips are now packaged in protective plastic containers. Not so much for safety in shipping—but as an "invite" to the operator TO RETURN THE TIP TO THE CONTAINER when it is not in use. This will keep the fine-finished surfaces protected from grit and dirt, from careless handling . . . will multiply tip's useful life 2 to 3 times over. In addition, two NCG tip cleaners are packed with each tip for proper cleaning of preheat and high pressure oxygen passages. Another measure to greatly lengthen useful tip life. Compare Torchweld "75" with any cutting torch you have used before. Contact dealer, district office or home office for demonstration.

Copyright 1954, National Cylinder Gas Company

NCG NATIONAL CYLINDER GAS COMPANY
840 N. Michigan Ave., Chicago 11, Illinois

If you write maker identify as IEN - 5849

MODERNIZE WITH TRIPLETT METERS

A SIZE, TYPE, AND STYLE FOR EVERY INSTALLATION

Your instrumentation is strictly modern in design and construction with Triplett Meters. You can have sizes 2" to 7" in a wide variety of case shapes and mounting arrangements, A.C., D.C., R.F., Rectifier or Dynamometer. Molded and metal cases, rear illumination, and other special features are available. For precision and economy virtually every meter part is made in Triplett plants under rigid humidity and dust control. Every meter represents the refinements gained in half a century of meter experience. Keep *your* panels up-to-the-minute with Triplett Meters—famous the world over for quality, accuracy, and dependability.

Triplett Electrical Instrument Co.
Bluffton, Ohio, U.S.A.

TRIPLETT

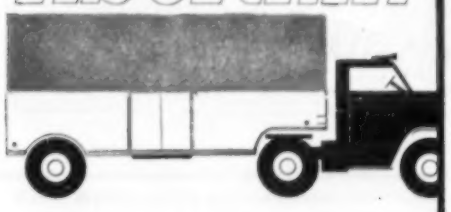
If you write maker identify as IEN - 5850

New extra strong extra light

U.S. fiberthin

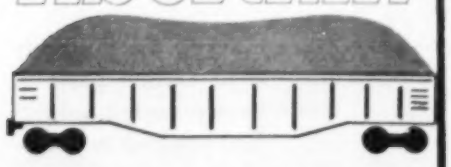
The finest in coated nylon

U.S. fiberthin



for all types of protective covering

U.S. fiberthin *



Here's the product that combines unbelievably high tear strength with extreme light weight. U.S. Fiberthin's secret is its nylon ribbon-like threads that shift to meet the strain within their protective coating. The illustrated features show what a remarkable material U.S. Fiberthin actually is. Its possibilities are limitless . . . from trucks to tarpaulins to tents. This new protective material may be exactly what you've been waiting for. If so, write today for full information and samples. *patent no. 2,619,705. Dec. 2, 1952

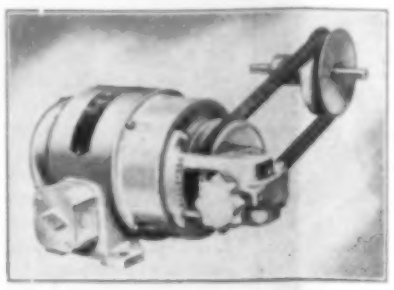
US RUBBER

UNITED STATES RUBBER COMPANY
Coated Fabrics Department • Mishawaka, Indiana

If you write maker identify as IEN - 5852

DRIVE . . Constant speed motor takes Reeves Flexi-Speed transmission

Source: REULAND ELECTRIC CO.
Westminster & W. Mission, Dept. IEN, Alhambra, Cal.



For equipment drive

The company announces availability of three motor ratings in which it is prepared to supply its standard ac. constant speed motor with a special adapter end bell to take the Reeves Flexi-Speed transmission. A typical example is illustrated.

Motors rating ½ and 3 hp. are available in 1,200 and 1,800 rpm. basic speeds to assemble the transmission for either 8 to 1 or 6 to 1 overall speed adjustment range. The company's 1-hp. motor, for 1,800 rpm. basic speed, will take the transmission with either a 7 to 1 or a 6 to 1 speed range.

If you write maker identify as IEN - 5853

PROTECTING . . Plastic coated glove in single seam design with knit lining

Source: PIONEER RUBBER CO.
1939 Tiffin Road, Dept. IEN, Willard, Ohio

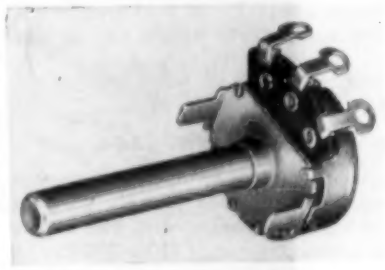
Particularly for plant workers

Stanflex is a new glove, free from seams on the surfaces that are exposed to abrasion. The canvas body is plastic coated and the inner surfaces are lined with elastic knit jersey for comfort and to permit maximum hand movement. The glove is available in knit wrist, band top and gauntlet styles with curved fingers and wing style thumb. Exterior finish is non-slip satin. The plastic is polyvinyl chloride for resistance to attack by acids, abrasion, caustics, oils.

If you write maker identify as IEN - 5854

RESISTOR . . Variable design to tab mount in electronic equipment

Source: STACKPOLE CARBON CO.
1942 Tannery St., Dept. IEN, St. Marys, Pa.



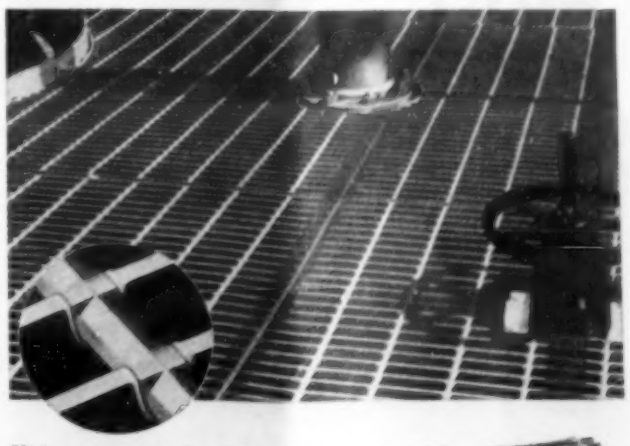
Details upon request

Type LR5 is a new variable resistor measuring 0.894 in. in diameter. The unit mounts by means of two tabs extending from the front cover. These tabs insert into rectangular slots of a mounting plate to hold the unit in position after the extended tab portion has been twisted. The front mounting plate serves as a bushing. The resistor dissipates 0.5 watt and can be supplied with any of nine line switches to meet requirements.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5855

Gary WELDED GRATING IS TAILOR-MADE



This neat appearing one-piece grating with hexagonal cross bars and main bearing bars resistance-welded, provides durable, safe open flooring. It's factory-fabricated to your specifications to save you installation time and money. For complete details on Gary Welded, Gary Gratings, Gary Stair Treads and Gary-Irving Decking, send for Catalog IN-54

FREE SAMPLE
Write for paper weight size sample and descriptive catalog.

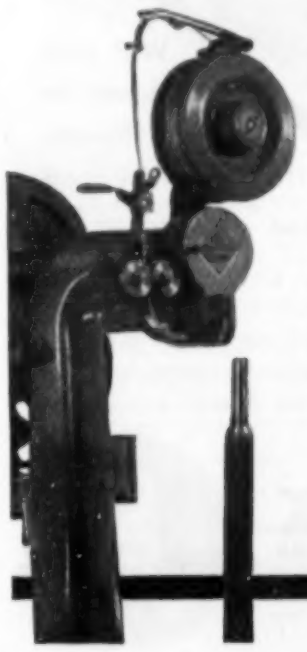
Standard Steel Spring Division
ROCKWELL SPRING AND AXLE CO.
4045 East Seventh Avenue • Gary, Indiana

If you write maker identify as IEN - 5856

Add an Acme Steel 25-pound coil holder

to your present wire stitching equipment

Stitch 2½ times longer without stopping

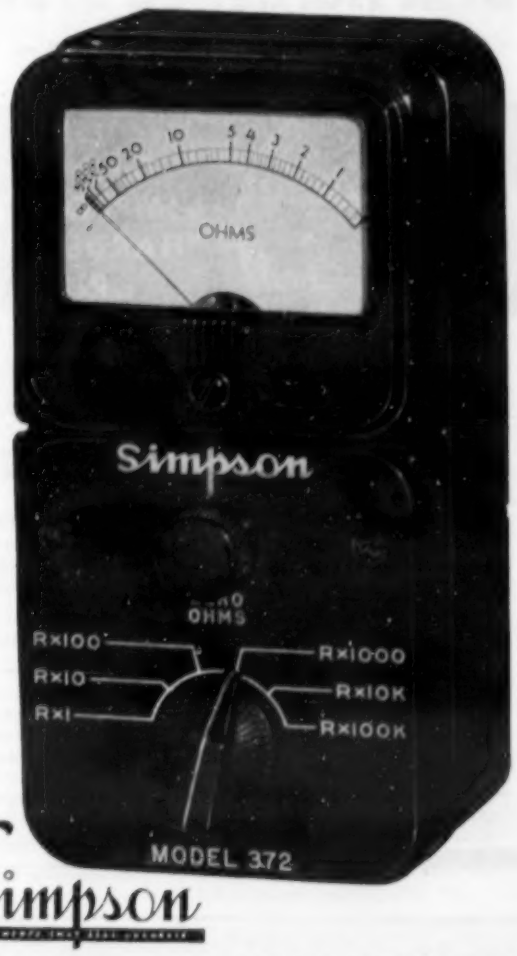


The rugged new Acme Steel 25-pound coil holder means less down time on your wire stitching operations, both because it holds 2½ times as much wire as the conventional 10-pound coil holder, and because it's easier and faster to load. Features are tangle-free wire feed and positive shoe-type brake. For details, write Acme Steel Products Division, Dept. IEN 54, Acme Steel Company, 2840 Archer Avenue, Chicago 8, Illinois.

STITCH IT... STRAP IT... SHIP IT... SAFELY!

ACME STEEL

If you write maker identify as IEN - 5857



Simpson

multi-purpose MICROTESTERS STAY ACCURATE!

These instruments are 3"x5⅞"x2½"—weigh 1¼ to 1½ lbs.—shipping weight, 3 lbs. Prices shown are dealer's net. Except where otherwise indicated test leads with prods or test leads with alligator clips and insulated sleeves are $1.25 extra.

AC AMMETER	Model 370	Price $19.95
AC VOLTMETER	Model 371	Price $18.40
OHMMETER	Model 372 with Test Leads	Price $25.50
DC MILLIAMMETER	Model 373	Price $19.95
DC MICROAMMETER	Model 374	Price $23.00
DC AMMETER	Model 375	Price $19.95
AC VOLTMETER	Model 376	Price $19.95
DC VOLTMETER	Model 377	Price $19.95
AC MILLIAMMETER	Model 378	Price $22.60
BATTERY TESTER	Model 379 with Test Leads and Operator's Manual	Price $23.70

Simpson ELECTRIC COMPANY
5200 West Kinzie Street, Chicago 44, Illinois
EStebrook 9-1121
IN CANADA: Bach-Simpson, Ltd., London, Ontario

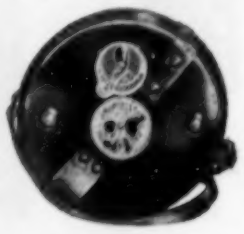
If you write maker identify as IEN - 5859

Will your Watchman be ALERT to handle this unexpected weekend *"customer"?*

The Detex GUARDSMAN Watchclock *keeps* watchmen on their toes. Gives unbroken mechanical supervision you can trust *7 days a week.*

A GUARDSMAN pays for itself in lowered insurance premiums. Write for free folder.

DETEX
WATCHMENS CLOCKS
PATROL ALERT ECO NEWMAN GUARDSMAN
DETEX WATCHCLOCK CORPORATION
Dept. E-5
76 VARICK STREET, NEW YORK 13, N. Y.
Sales and Service in All Principal Cities



If you write maker identify as IEN - 5860

Drill Hardened Steels without Annealing—

With the new, improved "HARDSTEEL" Drill, you can do accurate, smooth drilling, countersinking, counterboring and reaming in steels hardened by any process without first annealing the work. And they work with equal ease on work-hardening steels and high carbon—high chrome steels of any degree of hardness.

"HARDSTEEL" Drills fit standard drill presses. They save time and reduce rejects. They permit engineering changes requiring additional drilling after hardening. And parts drilled after hardening always match at assembly.

Write for a copy of the "HARDSTEEL" Operators Manual showing how "HARDSTEEL" drills are cutting costs in thousands of plants.

You Harden It—We'll Drill It—With "HARDSTEEL"

BLACK DRILL COMPANY, INC.
1378 East 222nd St. • Cleveland 17, Ohio

Also makers of— BLACK DRILLING UNITS—AUTOMATIC, SELF-CONTAINED—FOR COST-CUTTING PRODUCTION ON ALL MATERIALS *Write for information*

If you write maker identify as IEN - 5861

MORE WORK *using* FEWER WORKERS *with*

DUO-FAST One-Hand AUTOMATIC TACKERS

You can do much more tacking in less time with these efficient Duo-Fast Tackers . . . You'll like the wide range of AIR TACKERS, GUN TACKERS and HAMMER TACKERS available. You get exactly the model you need . . . You'll like our money-saving FREE MAINTENANCE SERVICE. For the complete story, mail this coupon.

FASTENER CORP. 860 Fletcher St., Chicago 14, Ill.

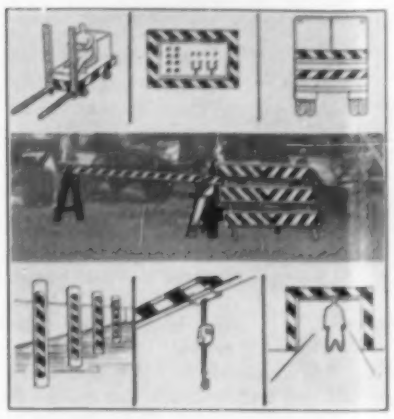
FREE — TELL US MORE about Duo-Fast Tackers for — _____

Our Business is ____
Company Name ____
Address ____
City ____ State ____

If you write maker identify as IEN - 5862

MARKING . . Self-adhesive tape outlines traffic aisles, hazardous areas

Source: W. H. BRADY COMPANY
727 W. Glendale Ave., Dept. IEN, Milwaukee 12, Wis.



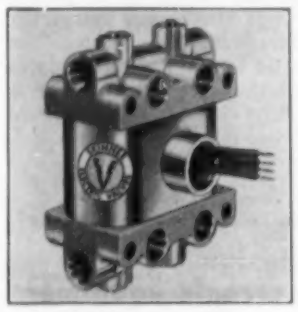
Replaces hand painting

Four widths are 1 to 3 in. in this new self-adhesive Warning Stripe tape. Three bright color combinations are yellow and black, black and white, red and white. The tape is available from stock in three self-adhesive backings. These include acetate plastic for indoor use, polyvinyl plastic for outdoor use and areas where dirt, grease, oil and solvents are present, Scotchlite Reflective for use where warning signals with brilliant reflection are required. The tape applies permanently to any clean dry surface to mark barricades, low or narrow areaways, elevator gates, posts, electrical apparatus, obstructions, trucks.

If you write maker identify as IEN - 5863

VALVE . . Solenoid operated four way, air, liquid, to 150 pounds

Source: SKINNER ELECTRIC VALVE DIVISION
95 Edgewood Ave., Dept. IEN, New Britain, Conn.



For ¼ in. pipe

Overall height is a little over 4¼ in. in this new Series V9 double solenoid four-way valve. It is available with orifices ranging from 3/64 to ⅛ in. and for pressure to 150 pounds. The solenoids can be specified for standard ac. or dc. voltages. Power consumption is maximum at 10 watts per solenoid.

Three basic types include normally open, normally closed and a combination of the two. Application can be made to control one double-acting cylinder or two single-acting cylinders. The valve is packless design, direct acting, spring loaded for positive action and bubble tight shut-off.

If you write maker identify as IEN - 5864

Statigun trade names a new portable instrument to measure electrostatic charges on surfaces. It reads directly in volts on its meter scale without making contact with the object or without using any test probe. Its range is to 300 kv. in three range steps. It is applied by pointing it at the surface suspected of holding the electrostatic charge and then depressing a trigger switch. Bulletin 123 explains it in detail. Get in touch with Herman H. Sticht & Co., 27 Park Place, Dept. IEN, New York 7, N. Y.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5865

and NOW!

Stripped-Down Variac MOTOR SPEED CONTROLS

To meet numerous requests from machinery manufacturers and users for a 'basic' model of the popular VARIAC® Motor Speed Control, two unmounted units are announced.

They are in ⅓- and ¼-hp sizes and include the essential control circuits mounted on a metal panel, completely wired, and an unmounted VARIAC with knob and dial.

Terminal strip on mounting plate has all necessary leads so that fusing, dynamic braking, start-stop-reverse functions, etc. can be readily added by the user.

Type 1700-BS1 VARIAC Motor Speed Control (⅓ hp): $135
Type 1702-AS1 (¼ hp): $195

Write for the VARIAC Motor Speed Control Bulletin for Complete Data

GENERAL RADIO Company 275 Massachusetts Ave. Cambridge 39, Mass.
90 West St. NEW YORK 6 · 920 South Michigan Ave. CHICAGO 5
1000 North Seward St. LOS ANGELES 38

If you write maker identify as IEN - 5866

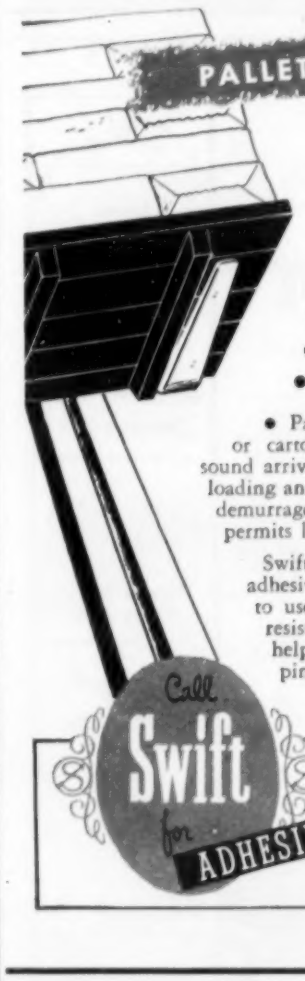
PLATEGRIP

PLATE FASTENERS FOR CONVEYOR BELTS

Make strong dust-tight, water-tight joints in belts of any width. Special design spreads tension uniformly across belt, allow natural troughing of belt and assures smooth operation over flat, crowned or take-up pulleys. Sizes for belts of from ¼" to 1½" thickness. *Write for Catalog Sheet.*

ARMSTRONG BRAY & CO.
5380 Northwest Highway • CHICAGO 30, U.S.A.

If you write maker identify as IEN - 5867



PALLETIZE WITH . . .

SWIFT'S PALLETITE ADHESIVES

- RESISTS HORIZONTAL SHIFTING
- POPS CLEAN ON VERTICAL PULL
- ONE GALLON DOES A CARLOAD!

• Palletizing or unit loading of bags or cartons is good insurance for safe, sound arrival of your merchandise. It speeds loading and unloading, reduces handling and demurrage costs — facilitates inventory and permits better use of warehouse space.

Swift has a versatile team of Palletizing adhesives that are ready, and economical, to use. *All* are non-skid and moisture resistant; one of them probably can help you save *real* money in your shipping department.

Write for information, today!

Call Swift for ADHESIVES

SWIFT & COMPANY
ADHESIVES PRODUCTS DEPT.
4115 PACKERS AVE.
CHICAGO 9

Another of Swift's Products for Industry

If you write maker identify as IEN - 5868

GET THE FACTS ABOUT CARBON

Many design engineers have cracked some mighty tough problems through the use of carbon parts in machine design. Years of study have revealed properties inherent in carbon which, when applied to industrial machines, simplify design, reduce maintenance costs, and add life to vital equipment.

Write Today For

Morganite Design Data Reference—describes advantages, lists chemical and physical properties, gives hints on design. No obligation.

Morganite INCORPORATED
3316 48th Avenue, Long Island City 1, N. Y.

If you write maker identify as **IEN - 5869**

HOW TO SAVE MATERIAL AND LABOR IN PIPING LAYOUTS

Here is a special fabricating service designed to save time, material and labor in piping systems. By eliminating numerous flanged joints and combining several fittings into one integral unit, as illustrated, Naylor fabrications provide the answer for greater efficiency and economy.

All types of materials can be fabricated accurately to your specifications. Sizes range from 3" to 44" in diameter and wall thicknesses up to ⅜".

Naylor Bulletin No. 525 presents helpful information on this special service. Write for your copy today and submit your problem for recommendation and quotation.

NAYLOR PIPE

Naylor Pipe Company • 1235 East 92nd St., Chicago 19, Illinois
Eastern U.S. and Foreign Sales Office 350 Madison Ave., New York 17, N.Y.

If you write maker identify as **IEN - 5870**

TWO GREAT NAMES TEAM UP TO ELIMINATE "BUSY-DOOR" BOTTLENECKS

● Doors are necessary but when they slow down traffic and interrupt the smooth flow of materials and parts, they become costly. Here Westinghouse and Stanley team up to eliminate such "busy-door" bottlenecks. Stanley Magic Door Controls make doors open and close automatically. Their operation requires a dependable source of regulated air pressure . . . this is supplied, in thousands of installations, by Westinghouse Air Compressors.

The Westinghouse Air Compressors are set to operate between 60 and 80 lbs. of pressure. When the pressure drops below the lower limit, the motor starts, builds up pressure to 80 lbs. and automatically shuts off. This reserve air supply, and the dependability of the Westinghouse Air Compressor assure the air you need when you need it.

Westinghouse Air Compressors come in a variety of sizes to meet every type of air requirement. For more information about Westinghouse Air Compressors call your local dealer.

Westinghouse Air Compressors

The compressor plant shown here was selected by Stanley as the most economical and efficient to operate their Magic Doors. Whether your air requirements are large or small, there's a Westinghouse Air Compressor in the proper size to handle the job.

Westinghouse Air Brake COMPANY

INDUSTRIAL PRODUCTS DIVISION WILMERDING, PENNA.

Manufacturers of air compressors, pneumatic cylinders, actuators, air control devices, engineered pneumatic control systems and front end loaders.

Factory Branch: EMERYVILLE, CALIF.

Distributors throughout the United States . . . Consult your Classified Directory.
Distributed in Canada by: Canadian Westinghouse Co. Ltd., Hamilton, Ontario.

If you write maker identify as **IEN - 5872**

PRESS . . Hand bending brake rates 16 gage mild steel to 24 inches

Source: O'NEIL-IRWIN MFG. CO.
547 Eighth Ave., Dept. IEN, Lake City, Minn.

On portable stand

Lever operated cam works in connection with a ratchet drive to move the upper head of this new 24-in. Di-Acro press brake downward and back up to open position. The machine has been designed to release larger production equipment from short run forming operations and for use in experimental and model departments. It rates 8 ton pressure, has a 24-in. ram and 6-in. throat with 14 in. of clearance between the housings.

Stroke measures 2 inches. Bed adjustment is 1½ inches. Rotating shafts are mounted in Torrington roller bearings. The ram guides are ground hardened steel. The company is prepared to supply standard and specified tooling.

If you write maker identify as **IEN - 5873**

MILLING . . Semi-automatic machine to machine keyways, splines, slots

Source: KURT ORBAN COMPANY
204 E. 43rd St., Dept. IEN, New York 17, N. Y.

Please note our error

We call your attention to our error in naming England as the source for the new Model LF-32 Hurth milling machine, previously described IEN-4367-54. Actually it is made in Germany.

If you write maker identify as **IEN - 5874**

FURNITURE . . Portable stand to make mobile test instrument setup

Source: BROWNING LABORATORIES INC.
742 Main St., Dept. IEN, Winchester, Mass.

Model OD-1

Two shelves made of steel, finished in green crackle lacquer, are supported on formed tubular steel legs finished in chromium plate. The legs terminate in 3-in. casters, two of which are provided with brakes. The shelves measure 24 by 24 in. and stand 19¾ in. apart. Above the upper shelf is a cross bar that can be positioned at various heights to support the front of one or more instruments to stand at a convenient angle for worker observation. The assembly includes a drawer with provision for locking and a four-position power outlet with an extension cord and plug. List price of the stand without the drawer, cross bar or outlet strip is about $50.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 5875**

IMPROVED QUALITY—LOWER COST

TURNABOUT®

ADJUST • A • FORK

HYDRAULIC LIFT TRUCK
with interchangeable forks

Improved design . . . mass production techniques, give you a quality product, **properly priced.** Proven superior performance . . . extra strength . . . highly maneuverable . . . easy operation. Resinoid type casters and aluminum leader wheels at no extra cost.

Easily interchangeable forks available in five standard lengths. Adjustable on truck frame to provide 25" or 27" width.

Unconditionally guaranteed for one year *Write for descriptive bulletin*

RACK HYDRAULIC EQUIPMENT CORPORATION
CONNELLSVILLE, PENNSYLVANIA
AGENTS IN PRINCIPAL CITIES UNITED STATES, CANADA, EUROPE

If you write maker identify as **IEN - 5876**

Announcing a new service from Ampco

AMPCO* METAL Grade 24 Die Blanks

Now available from stock

. . . the dies for forming and drawing stainless steels that give you longer runs, reduce scrap loss, cut your costs.

Now you get immediate delivery from Milwaukee stock and new low prices on most commonly used types and sizes of Ampco Grade 24 die blanks including:

34 sizes of solid rectangular pieces from ½" x 1" x 12½" to a maximum of 4" x 4" x 12½".

27 sizes of centrifugally cast blanks from 4" OD x 1" ID x 1½" thick up to 20" OD x 12½" ID x 2" thick.

11 sizes of solid rounds up to 5" OD x 12½" long.

Here's what you get with die blanks made from this remarkable alloy:

1. Usual scrap losses are minimized, because Ampco Grade 24 dies are non-galling, non-loading.

2. You save finishing time and costs — get a surface free from scratches and die marks.

3. You get longer runs without re-dressings, longer die life, reduced downtime.

Write today for complete information and new prices.

*Reg. U. S. Pat. Off.

Ampco Metal, Inc.
DEPT. IE-5 • MILWAUKEE 46, WISCONSIN
West Coast Plant, Burbank, California D-18

If you write maker identify as **IEN - 5877**

SEND FOR THIS NEW BULLETIN

Improved Method Centrifugal SPRAY DRYER *and* CONCENTRATOR*

CONTRACT DRYING

We invite inquiries for Contract Drying in our fully equipped Stainless Steel Plant in Chicago. Shipments can be made direct to our Railroad Switch Track or Truck Docks.

THE DRYING AND CONCENTRATING COMPANY DRYER

Improved method for **DEHYDRATING**

Solutions, emulsions and materials which can be handled in a liquid form including:

Chemicals
Pharmaceuticals
Milk Products
Blood or Blood Plasma
Soups, Vegetables, etc.

This complete spray drying plant employs a unique Centrifugal-type spray head, and consists of a Drying Chamber, Concentrator, Air Heating Unit, Air Filter, Air Supply Fan, Powder Cooling Fans and Sanitary Pumps with variable speed drives for handling liquid material and controlling the moisture.

***CONCENTRATOR AVAILABLE SEPARATELY**

The Concentrator can be operated as a separate unit for reducing liquid products to almost any desired degree of concentration, almost instantaneously, retaining natural flavors and vitamins.

Write for New FREE Bulletin 265R

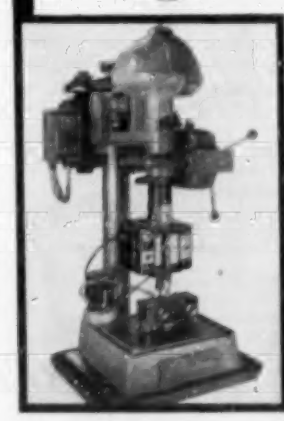
DRYING and CONCENTRATING CO.
332 SOUTH MICHIGAN AVENUE, CHICAGO, ILLINOIS

If you write maker identify as **IEN - 5878**

Commander LEAD-MATIC *Tapper*

Automatic Tapper with Lead Screw
FOR HIGH PRODUCTION PRECISION TAPPING

- **Precision Ground Lead Screws Assure Finest Threads**
- **Electrically Controlled Cycle or Jog Tapping Action**
- **Hand, Foot or Fixture Switch Control**
- **Easily Adapted to Any Drill Press**
- **Range #0 to ¾"**



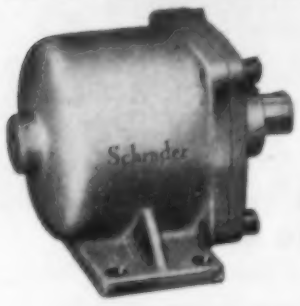
Built for high production tapping . . . precision or otherwise, the Commander LEad-Matic Tapper makes any drill press a precision tapping unit, even with inexperienced operators. Electric control of Cycle or Jog tapping action provides versatility to handle any job . . . automatic tap reversal eliminates drill press motor reversing and speeds tapping. Compact, ruggedly built, easy to operate, the Commander LEad-Matic Tapper will cut your tapping costs and reduce rejects to a minimum.

Write for illustrated circular and name of nearest Distributor.

Commander MFG. CO.
4219 W. KINZIE ST. • CHICAGO
PRODUCT OF COMMANDER
BUILDER OF PRODUCTION TOOLS

If you write maker identify as IEN - 5879

Simplify any work holding operations with ClampAirs



Whether you want a bulldog grip or a gentle one, you'll find the answer in Schrader ClampAir cylinders. ClampAirs eliminate time-consuming hand clamping and rejects caused by an improper holding force.

Write for more information on how the versatile ClampAir can be used in your plant. Full line catalog gives all the data on Schrader ClampAirs as well as other numerous Schrader Air Control Products.

A. SCHRADER'S SON

458 Vanderbilt Avenue Dept. D-38 Brooklyn 38, N. Y.

If you write maker identify as IEN - 5880

Find Out About

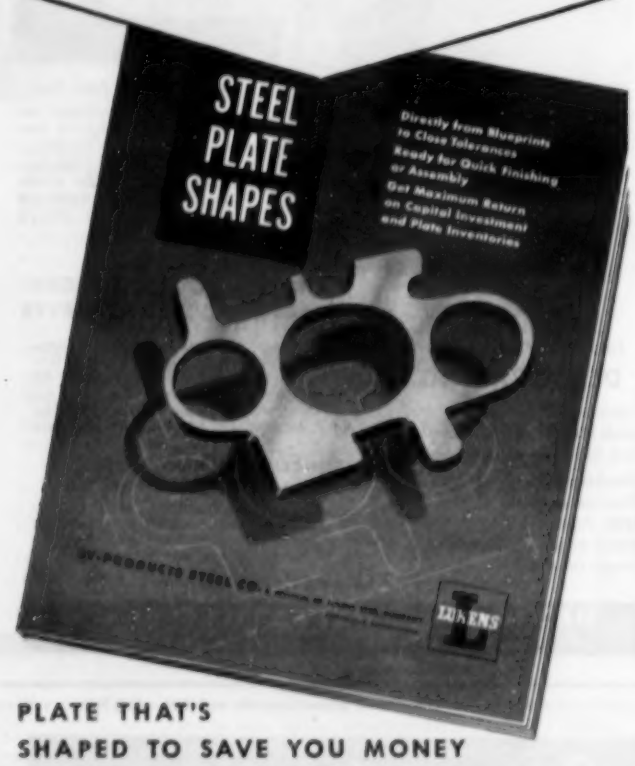


PLATE THAT'S SHAPED TO SAVE YOU MONEY

You save both time and money using this new Steel Plate Shapes Service. Find out how you can start production several steps ahead. You can eliminate plate inventories, and you pay freight only on that part of the plate that is actually required.

There's no need to invest in new cutting and forming equipment for your own shops. We have over 150 major machines to flame-cut, shear, blank, press, bend or otherwise form steel plate.

This new Bulletin 712 shows how Steel Plate Shapes Service can help you. For a free copy, use this coupon or write on your company letterhead.

LUKENS BY-PRODUCTS STEEL CO.
A DIVISION OF LUKENS STEEL COMPANY

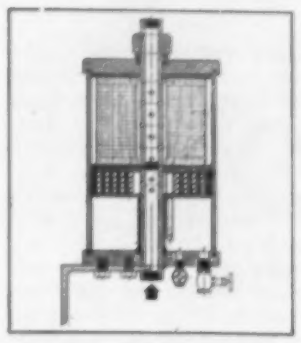
By-Products Steel Co.
Division of Lukens Steel Company
675 Strode Avenue, Coatesville, Pa.
Please send me a free copy of Bulletin 712.

NAME _____
TITLE _____
COMPANY _____
ADDRESS _____
CITY _____ ZONE ____ STATE _____

If you write maker identify as IEN - 5882

SEPARATING . . Coil and filter to dry and to clean compressed air

Source: HANKISON CORPORATION
184 Biltmore Bldg., Dept. IEN, Pittsburgh 16, Pa.



Instrument quality air

Model B-30-DCN is a new assembly of Condensifilter, previously described IEN-3661-53. Individual sections of the new unit stand 14 in. in housing height by 9½ in. in base diameter. Inlet and outlet connections measure ¾ inch. A single section rates 30 cfm. at 100 pounds. Any number can be assembled in parallel to meet given requirements.

Compressed air enters through a pipe connection at the bottom to move upward around a Cupernickel condenser coil containing 27 ft. of ⅜-in. tube. Cold water is circulated through the coil from a shop source. Dehydrated air continues upward to pass through a filter cartridge above the coil and issue from the pipe connection at the top of the housing.

Moisture collects at the bottom of the housing and is discharged at intervals through an external stainless steel trap. The disposable filter cartridge presents 4 sq. ft. of filter area. The separator is suited to supply clean dry air to tools, gages, laboratory equipment and to serve desiccant type dehydrators.

If you write maker identify as IEN - 5883

THREADING . . Lead screw head for application in a drilling machine

Source: AUTOMATIC METHODS INC.
965 W. Grand St., Dept. IEN, Elizabeth, N. J.

The work floats

New assembly of the company's lead screw tapping attachment, with a cone clutch reversing mechanism and adjustable depth control, is now available for production threading on a drilling machine. Unskilled operators can produce precision threads independent of the condition of the machine.

The lead screw prevents thread misalignment caused by pressure that may be exerted by the operator. The assembly includes a Jacobs Rubberflex collet and nut to align the tap and a floating lock assembly to drive it. The head clamps to the quill of the drilling machine. Two head sizes will handle No. 0 to 5/16-in. threads and No. 10-32 to ¾-in. threads respectively.

If you write maker identify as IEN - 5884

Crane Packing Co., 1800 Cuyler Ave., Dept. IEN, Chicago 13, Ill., is prepared to do product lapping work on a contract basis, using equipment of its own manufacture, in its Morton Grove, Ill., plant. It is able to handle lapping work from ⅛ to 16 in. in diameter. It can work on aluminum, carbon, ceramics, cast iron, brass, glass, Stellite, steel.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5885

Need a building? Or a series of them? Quickly, and at low cost?

Truscon SPEED-ERECT Steel Buildings can be arranged to fit exactly your requirements of design and budget. Truscon Steel Buildings are available in a wide range of standard designs. They are used for all kinds of industrial and commercial buildings because they offer fire protection, permanence, ease and speed of erection, low upkeep, low cost, high investment value. Truscon Steel Buildings have a high salvage value which permits them to be dismantled and re-erected in an entirely new location at modest expense.

Write and tell us your building requirements.

FREE BOOK—Plan your building needs with the aid of the fully illustrated, 24 page catalog giving full details on these Truscon Ready-Made Steel Buildings. Write for your free copy today.

TRUSCON STEEL DIVISION • REPUBLIC STEEL
1094 Albert Street • Youngstown 1, Ohio

If you write maker identify as IEN - 5886

free help! for product designers!

Illustrated booklet tells how MASONITE PRESDWOOD helps make better products

Could be just what you're looking for! Full of ideas to help you shape up new products, improve old ones. Masonite Presdwood,® that tough, grainless, all-wood hardboard, is so very versatile that designers and manufacturers are still discovering new ways to use it. You'll find it better—28 ways! Comes in panels of 44 types and thicknesses. Write today for "A Guide for Product Designers."

PRESDWOOD WOOD MADE BETTER

NATURALLY STRONGER WITH LIGNIN
MASONITE® CORPORATION
Dept. IEN-5, Box 777, Chicago 90, Ill.

"Masonite" signifies that Masonite Corporation is the source of the product

If you write maker identify as IEN - 5887

IT'S NEW! It's Powerful! It's Low Priced!

STONE Model M-35

12" Cut-Off Machine
For Ferrous and Non-Ferrous Metals

CAPACITY
Ferrous—1½" solids, 2½" O.D. pipe, 2½" structurals
Non-ferrous—2½" solids, 3" tubing and extrusions

We are proud to present the newest member of our superior line of high speed cut-off machines. The M-35 has a full 3½ h.p. geared-in-head motor. The direct drive insures delivery of full power to the cutting edge. Result — faster cutting (3 seconds per square inch of metal) and greater wheel life.

PRICE
Completely Equipped Ready for Cutting
$445
F.O.B. Syracuse, N. Y.

MODEL M-75
Full 7½ h.p. geared-in-head motor. Will cut all ferrous and non-ferrous solids up to 2½", pipe and structurals up to 4". Can be equipped for wet cutting.

MODEL SS-20
Operates on guided rails for cutting larger structural steel, plate, sheets, with cuts up to nine feet in length. Cuts wet or dry.

STONE ABRASIVE WHEELS
Cut 25% faster — average cutting time is 3 seconds per square inch of metal. Increased wheel life up to 25%. Write for prices.

For complete information write to
STONE MACHINERY CO., INC.
Fayette St. Manlius, N. Y.

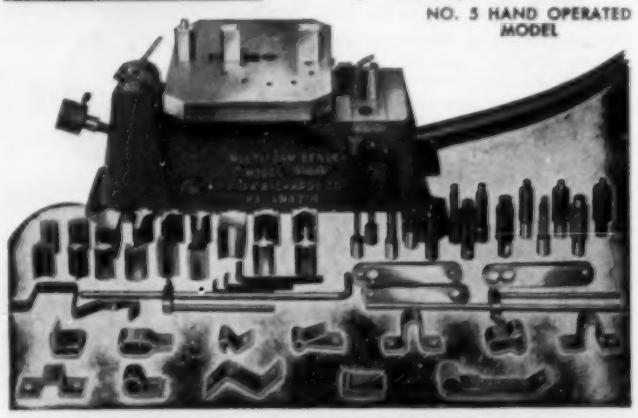
If you write maker identify as IEN - 5888

THE FAMOUS MULTIFORM BENDER CUTTER

Produces Without Special Tooling • Saves Die Costs Saves on Expensive Presses

The illustration to the left shows just a few pieces produced on our famous Multiform Bender-Cutter. This efficient machine is useful in all lines of trade, Spring Plants, Radio, and Electrical Equipment Manufacturers, complete with tooling for bending material up to ⅛" x 1½".

NO. 5 HAND OPERATED MODEL



FIVE-IN-ONE-TOOL—ALSO LARGER MODELS

Air Operated Models in this and Larger Sizes Available

IT BENDS FLAT AND ROUND STOCK INTO ANY SHAPES, CUTS AND PUNCHES FLAT STOCK

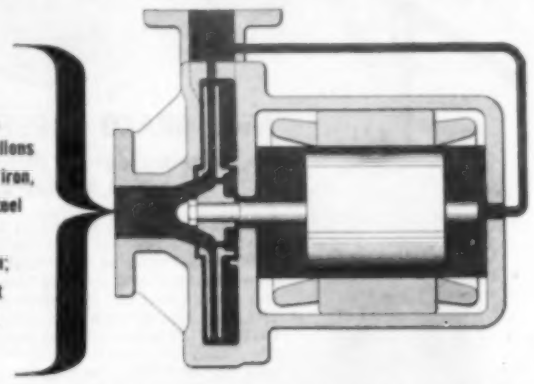
J. A. RICHARDS CO. 907 NORTH PITCHER ST. KALAMAZOO 60F, MICH.

If you write maker identify as IEN - 5889

Chempump

THE PUMP THAT CAN'T POSSIBLY LEAK

...no mechanical seals...no stuffing box



⅛ to 3 horsepower, 0 to 180 gallons per minute; iron, stainless steel or monel construction; prices start at $96.00.

Think of what this means when handling toxic, corrosive or expensive process fluids. Chempump, with its magnetically-driven enclosed rotor can work—and save—for you, too. It is performance-proved in over 6 years of field experience. Write for complete data.

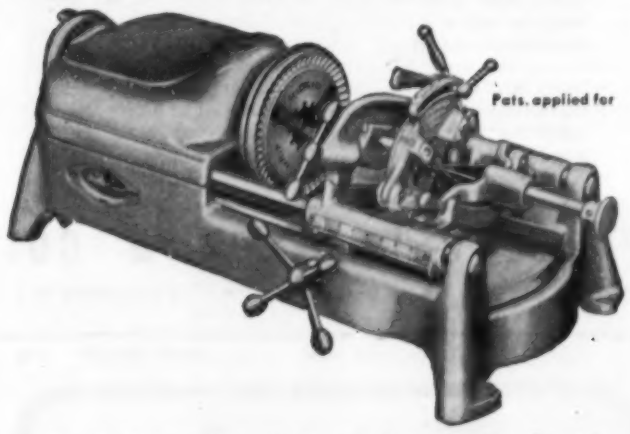
CHEMPUMP CORPORATION
1302 EAST MERMAID LANE • PHILA. 18, PA.

If you write maker identify as IEN - 5890

For Fast Bolt Threading ...it's the New 500A RIDGID

with new "SPEED-GRIP" CHUCK

New principle... not just another hammer chuck!



Pats. applied for

The bolt and rod threader that's fast!

Capacity ¼" to 2" bolts—pipe, too, ⅛" to 2"

You've got to see it and try it to believe it! Only 2 quick-opening die heads—small head for ¼" to 1" bolts, large head for 1¼" to 2" NC, to 1½" NF—to 2½" in 8N, 12N and 16N . . . easy die change, right or left hand threads, easy adjustment to over or under size. Special dies on request. This 500A threads any length bar to 2½" diam., makes studs with RIDGID Nipple Chuck, cuts off 5/16" to 1" rod. Independent operation of tools. Lots of power. New Speed-Grip Chuck guaranteed to hold rod or pipe securely *forward or reverse*—motor action makes it tighter. See it, buy it at your Supply House.

THE RIDGE TOOL COMPANY • ELYRIA, OHIO, U.S.A.

RIDGID
Work-Saver Pipe Tools

If you write maker identify as IEN - 5892

CONVEYING . . Overhead trolleys and box track for loads to ½ ton

Source: RICHARDS-WILCOX MFG. CO.
Dept. IEN, Aurora, Ill.

Illustrated details in Catalog A-93

Safe-Rail designates a new box type track and a variety of ball bearing load trolleys, originally developed to supplement the company's Zig-Zag power conveyor in which a motor driven chain pushes the independent trolleys along. Basic component parts in the new equipment, such as straight track, curves, brackets and drop fittings, are identical with the originally developed Zig-Zag units. The track is characterized by the fact that it encloses the load bearing wheels and protects them and the running surfaces against accumulations of dust and dirt.

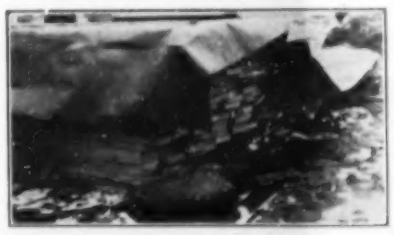
The trolley assembly starts with the simplest component consisting of two ball bearing steel load wheels and vertical steel guide wheels with a threaded stem extending downward. Two of these units apply with a malleable iron ring equipped body, as shown in the illustration, to make an assembly rating 250 lb. in load capacity. Two of these units and a third load carrying bar, equipped with a ring, increases capacity to 500 pounds. Two of these units connected together by a load bar and ring provides a load rating of ½ ton.

The load wheels are 2 in. in diameter. Overall length of the four combinations ranges from 2⅝ to 46 inches. The company is prepared to provide engineering assistance in layout of a conveyor installation and in recommendations for the component elements.

If you write maker identify as IEN - 5893

PROTECTING . . Paper tarpaulin for application in outdoor storage

Source: ANGIER CORPORATION
Dept. IEN, Framingham, Mass.



Ask for material sample

Brownskin designates a new tarpaulin made of two sheets of asphalt impregnated paper bonded together with a waterproof adhesive and reinforced with Fiberglas yarn. Edges are double folded and equipped with grommets. The tarpaulin is water proof, rot proof and tear resistant. It is creped to assist in handling. Applications include protective covering for materials and equipment in outdoor storage, windbreaks, ground covers, emergency shelters. Six standard sizes range from 8 by 10 ft. to 15 by 30 feet.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5894

DARNELL CASTERS & E-Z ROLL WHEELS

ECONOMY *and* **EFFICIENCY**

STRING GUARDS...
Even though string and ravelings may wind around the hub, these string guards insure easy rolling at all times.

RUST-PROOFED...
by the Udylite process, Darnell Casters give longer, care-free life wherever water, steam and corroding chemicals are freely used.

RUBBER TREADS...
a wide choice of treads suited to all types of floors, including Darnelloprene oil, water and chemical-resistant treads, make Darnell Casters and Wheels highly adapted to rough usage.

LUBRICATION...
all swivel and wheel bearings are factory packed with a high quality grease. Zerk fittings are provided for easy lubrication.

Write for Free Darnell Manual

DARNELL CORPORATION, LTD.
DOWNEY (LOS ANGELES COUNTY) CALIFORNIA
60 WALKER STREET, NEW YORK 13, NEW YORK
36 NORTH CLINTON STREET, CHICAGO 6, ILLINOIS

If you write maker identify as IEN - 5895

THE costliest cutting tool IN YOUR PLANT-

CYCLONE TYPE for tool and general grinding, polishing, woodworking, plastics, glass, ceramics, etc.

FILTER TYPE for grinders, drills, lathes, surface grinders, etc.

No—it's not a tool of production—it's a tool of destruction! . . . it is ABRASIVE GRIT—by-product of your grinding, cutting and finishing operations.

Hammond DUSKOLECTORS

A MUST FOR DUST!

These units trap dangerous dust before it can harm the health and efficiency of your employees and damage valuable machinery . . . These two distinct types of Duskolectors offer the best and most economical solutions to your special dust problems. Hammond experience will help you too, in eliminating the dust menace . . . Write today for bulletin.

Hammond Machinery Builders
1607 Douglas Avenue • Kalamazoo, Michigan

Hammond OF KALAMAZOO. GOOD MACHINERY SINCE '82

If you write maker identify as IEN - 5896

now . . . more important than ever . . .

the efficiency, economy and dependability of Wells Heavy-Duty Cut-Off Saws

SEARCHING for a way to reduce metal cut-off costs? Here's an answer—the Wells No. 12 Saw. It's a heavy duty, hydraulically operated saw with automatic cutting cycle designed to step up production with greater accuracy. Capacity is 12" x 16", rectangular, 12¾" dia., rounds. Ask your Wells Dealer for full information or write direct.

Wells

Products by Wells are Practical

METAL CUTTING BAND SAWS

WELLS MANUFACTURING CORPORATION
1111 MADISON ST., THREE RIVERS, MICH.

If you write maker identify as IEN - 5897

give your product a BIG LIFT *with* GUARDIAN SOLENOIDS

Yours—Guardian's New SOLENOID BULLETIN just off the press! Get your free copy describing the complete new Guardian line of AC and DC Solenoids (Continuous and Intermittent Duty) with Operating Data and dimensional drawings. Adjustable plunger strokes vary, to specification, from 1/16 inch up to 2 inches, lifting any required weight of less than 1 oz. up to 9 lbs. New, compact "Power Type" Solenoids feature laminated coils that provide a *big lift* for a positive, fast, full stroke. Guardian will gladly work with you on your experimental projects where solenoids are used singly or in combination with Steppers, Relays, Switches and other electrical components.

NO. 1G A. C. SOLENOID

NO. 14 A. C. SOLENOID

WRITE or wire today for your Free Copy of this New 8-Page Guardian SOLENOID BULLETIN "SOL-8" including the new Power Types.

GUARDIAN ELECTRIC
1620-F W. WALNUT STREET CHICAGO 12, ILLINOIS
A COMPLETE LINE OF RELAYS SERVING AMERICAN INDUSTRY

If you write maker identify as IEN - 5898

all-around protection

with REALOCK FENCE

With a Realock Fence you have protection that's all around your grounds . . . all around the clock—an ever-present, ever-vigilant guard against arson, burglary, vandalism and other costly hazards.

Noted for its rugged construction, Realock Fence costs little or nothing for maintenance; can be depended on for long-lasting resistance to the weather.

Consult your classified telephone directory for the nearest Sales Office, or write to any of our three Division offices for free estimate or catalogue.

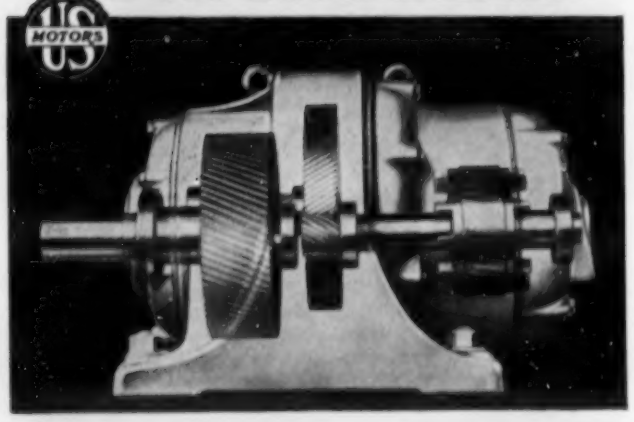
THE COLORADO FUEL AND IRON CORPORATION, Denver and Oakland
WICKWIRE SPENCER STEEL DIVISION, Buffalo

REALOCK FENCE
THE COLORADO FUEL AND IRON CORPORATION
BRANCHES IN ALL KEY CITIES

1943

If you write maker identify as IEN - 5899

Geared Power SIMPLIFIED WITH SYNCROGEAR



The motor that internally gears its speed

DON'T go to the expense of installing a gear box with extra coupling and guards to rig up slow speed for a motor. Install the *U.S. Syncrogear motor* and avoid extra contraptions. You'll simplify your power hook-up, save space, eliminate hazards and give your driven machine the most efficient power. The U.S. Syncrogear motor was one of the first complete integral power units, introduced 22 years ago. It's backed by experience, tested and proved performance and engineering "know-how" that only U.S. MOTORS can offer to those seeking the most dependable geared motor power.

SYNCROGEAR ADVANTAGES

- Compact—rugged—quiet
- No external gear box
- No extra coupling
- Internally-geared
- Single unit on one base
- Completely housed
- Reduced frictional losses
- Permanently-aligned parts
- Super-hardened gears
- Pyramidal supporting base
- Solid shank pinion
- Normalized castings
- Extra large oil reservoir
- Asbestos-protected windings
- In-a-line shaft
- Neat, streamline appearance
- Drip-proof surface

U.S. SYNCROGEAR MOTOR 4 TO 10,000 RPM. 1/4 TO 30 H.P.

REQUEST FOR SYNCROGEAR MOTOR BOOKLET

U. S. ELECTRICAL MOTORS INC. IEN-8
Box 2058, Los Angeles 54, Calif.
or Milford, Conn.

NAME_____
COMPANY_____
ADDRESS_____
CITY_____ ZONE____ STATE____

If you write maker identify as IEN - 5901

TESTING . . Environment chamber ranges minus 100 to plus 250 deg. F.

Source: CONRAD INCORPORATED
52 W. 4th St., Dept. IEN, Holland, Mich.

Plugs in to start

Work chambers measure 16 by 16 by 16 in. and 20 by 20 by 18 in. in two new sizes of environment test equipment which the company has added to its line, previously described IEN-4318-54. The assembly employs cascade type cooling equipment with semi-sealed refrigeration units using Freon 13 or 22, neither of which is toxic. Operation does not require connection to a water line. Circulation through the test chamber is by a fan.

Both assemblies are caster mounted and are small enough to pass through a 30-in. doorway. Both operate on 110-volt ac. Standard equipment includes an indicating controller. Proportional capacity control of either the heating or cooling rate can be specified. Operating controls are assembled on a panel at the front of the housing. The hinged test chamber door is gasketed for tight closure.

If you write maker identify as IEN - 5902

PLASTIC . . Thermoplastic sheet for product forming by vacuum process

Source: CHICAGO MOLDED PRODUCTS CORP.
2717 N. Normandy Ave., Dept. IEN, Chicago 35, Ill.

For you to form

New sheet adds to the company's Campco line, previously described IEN-9534-53. The new sheet is known as Campco S-300 GM. It has a surface finish resembling porcelain enamel. It is washable and can be fabricated into complex shapes. Color is white. Standard size sheets measure 39 by 72 in. and are 0.080 and 0.100 in. in thickness. The sheet can be supplied to order in 39-in. widths and any desired lengths. Pastel colors can be specified.

If you write maker identify as IEN - 5903

Lengthwise divider is now being supplied by Stackbin Corp., 1077 Main St., Dept. IEN, Pawtucket, R. I., for use in its tote and storage boxes. Now it is possible to store additional varieties of parts in stock rooms and tool rooms where the full capacity of a given box is not required for any one product.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5904

If you write maker identify as IEN - 5905

NOW . . . PACK BEARINGS FROM ORIGINAL PAILS!

New GRACO PRESTO-PAK

Grease comes through so fast it POPS!

PRESTO-PAK action is so fast and powerful that the bearing is actually *pressure cleaned* as well as thoroughly packed! After seating and locking the bearing in the spout receiver, just give a few quick lifts to the pump handle, and . . . PRESTO! A large volume of grease from the original container literally POPS into the bearing, leaving no air pockets. Bearing and ring surfaces are free of dirt and grime.

The PRESTO-PAK handles all bearings from 3/4" ID to 7 1/2" OD (small end). Hinged cover also protects receiver parts against dust when not in use. PRESTO-PAK is available in two models . . . for 25 lb. pails and 100 lb. drums. Write for new catalog sheet.

New Catalog Sheet Available

Write for your personal copy of the new PRESTO-PAK illustrated catalog sheet which shows in detail how this unit works. See how it will fit your own operation!

Regional Offices: New York • Philadelphia Detroit • Atlanta • Chicago • San Francisco

GRAY COMPANY, INC.
ENGINEERS & MANUFACTURERS
51 Graco Square • Minneapolis 13, Minn.

If you write maker identify as IEN - 5906

Brand your equipment with pf decals

Tapered TIMKEN Roller BEARING EQUIPPED

- low cost
- good looking
- permanent

Your nameplate identifies your equipment, keeps your trademark before prospective buyers. PF decals are designed with your product in mind. They go on quickly and last indefinitely. What's more, if you require operating instructions or wiring diagrams, PF decals put across your story at comparatively little cost. It's the brightest way of branding your equipment or setting up instructions that stay.

Learn how PF decals can do a job for you. Art service, consultation, and estimates without obligation. Send today for free booklets, "Decal-Ways to Sales," "PF Window Valances and Window Signs" and "How Leading Advertisers Use Decals."

PALM, FECHTELER & CO.
85 MAPLE STREET • Dept. IEN-3 • WEEHAWKEN, N. J.

If you write maker identify as IEN - 5907

sabre BLUING

For

LAYOUTS, TOOLS, DIES, TEMPLATES & PATTERN WORK

A new fast drying bluing packed in a self-sealing aerosol can for easy, safe and clean applicaton. It is highly recommended by leading manufacturers in aircraft, metal and woodworking industries because of its non-evaporating, economical and time-saving features.

Inquiries are invited from Representatives and Distributors

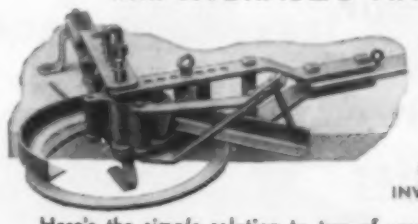
SABRE METAL PRODUCTS, INC.
8000 WEST 47th STREET LYONS, ILLINOIS
Phone LYONS 3-0104

If you write maker identify as **IEN - 5908**

HOSSFELD

ONE MAN • ONE BENDER

with HYDRAULIC ATTACHMENT



BENDS FLAT, ROUND, BAR, ANGLE & PIPE

BEND ANGLE IRON INWARD or OUTWARD

Here's the *simple* solution to two of your most difficult bending problems . . . angle iron and conduit. These *special* attachments for your HOSSFELD Iron Bender bend these *special* materials neatly, quickly, accurately to your exact specifications . . . a smooth, easy, one-man operation. Ask about the HOSSFELD Hydraulic Attachment that gives you complete mechanical operation.

UNIVERSAL IRON BENDER

MAKE 90° BENDS ON THIN WALL CONDUIT

GET ALL THE FACTS! Write today!

HOSSFELD MFG. CO.

424 W. 3rd Street • Winona, Minnesota

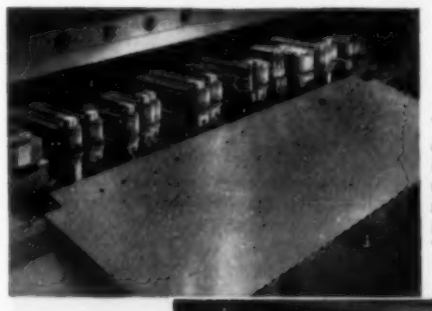
If you write maker identify as **IEN - 5909**

PUNCHING 1/8", 1/4" AND 3/4" THICK METAL ?

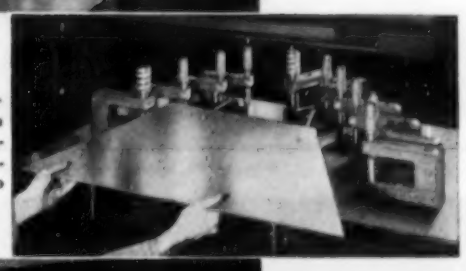
standardize on

WALES

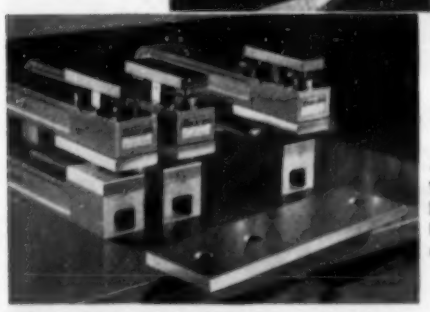
Hole Punching Units



◀ Showing Wales Type "BL" Hole Punching and Type "N" Notching Units in a combination press brake setup for punching and notching mild steel up to 1/8" THICK.



A stamping press ▶ setup of Wales Type "CJ" Hole Punching Units for punching mild steel up to 1/4" THICK.



◀ Showing a setup of Wales Type "HS" Hole Punching Units in a press brake for punching mild steel up to 3/4" THICK.

Only Wales Hole Punching and Notching Units provide the numerous *patented features* plus the *time and cost saving advantages* that have made it "standard practice" with thousands of metal fabricators to *standardize* on this *exclusive* equipment.

Wales independent, self-contained Units eliminate costly, single-purpose custom dies, reduce expensive setup time and practically eliminate press "downtime."

The same group of Wales Units may be interchangeably set up in stamping presses and press brakes. In many cases, setups of Wales Units are in production the same day a hole punching pattern is released by your engineering department.

The multiple advantages of Wales Hole Punching and Notching Equipment are too MANY to tell here, so write for fully-illustrated, functionally colored catalogs TODAY.

WALES-STRIPPIT CORPORATION

George F. Wales, *Chairman*

361 Payne Avenue, North Tonawanda, N. Y.

(Between Buffalo and Niagara Falls)

Wales-Strippit of Canada, Ltd., Hamilton, Ontario

Specialists in Punching and Notching Equipment

If you write maker identify as **IEN - 5911**

MOTOR CONTROL . . Reactor design for shaded pole motors, three speeds

Source: CURTIS DEVELOPMENT & MFG. CO.
3266 N. 33rd St., Dept. IEN, Milwaukee 16, Wis.

Built to order

New Curtis control provides for starting at low voltage and eliminates the possibility of core saturation in a shaded pole motor. Turning a knob on the face of the housing provides three speed positions, low, medium, high from an initial "off" position. The control is designed for motors rating 220-volt 60-cycle ac. with motor current to 3 amperes.

Assembly is in a steel housing provided with knock-outs on the four sides and rear and with a panel mounting front. The main housing dimensions are 4 by 4 by 2 in. measured back of the front plate. The line will include designs to mount into existing outlet boxes and for flush wall and panel mounting as illustrated.

If you write maker identify as **IEN - 5912**

BRAZING . . Coated bronze electrode for use on cast iron, steel, bronze

Source: EUTECTIC WELDING ALLOYS CORP.
40-40 172nd St., Dept. IEN, Flushing 58, N. Y.

Ask for leaflet TIS2190

Bronzochrom trade names a new coated electrode to produce a copper base deposit alloyed with chromium, manganese and silicon. The flux coating acts to restore the deposit elements lost across the arc. The electrode is suited to join an overlay. It is particularly suited for combining ferrous and non-ferrous metals including stainless steel, nickel and nickel alloys. The weld is machinable, wear resistant and has tensile strength to 90,000 lb. per sq. in., depending on the base metal upon which it is used.

If you write maker identify as **IEN - 5913**

FASTENING . . Concrete insert removably anchors a bolt or stud

Source: UNISTRUT PRODUCTS CO.
1013 W. Washington Blvd., Dept. IEN, Chicago 7, Ill.

Bulletin SI-1

New insert is designed to set into concrete, when it is being poured, to provide a shouldered steel lined recess to take a square or hexagon head nut, bolt or fitting to ½ in. in shank diameter. Load rating is to 1,000 pounds. Centered side holes take reinforcing rods to ⅜ in. in diameter. The insert measures about 4¼ by 2¼ by 1⅝ inches. Weight is about ½ pound. The material is 12-gage cold rolled steel. Finish is plain, enameled or galvanized as specified.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 5914**

YOU SAVE $$$ WITH

EMBOSSED LABELS

NO DIE CHARGE

FOR PRODUCT IDENTIFICATION

ANY SIZE LABEL
ANY SIZE LETTERS
ANY METAL — INCLUDING STAINLESS STEEL

Raised-letter nameplates to your specifications. Less expensive than comparable etched labels.

Tack-weld, rivet or screw them to your product. Paint or galvanize over them. Wording will remain sharp and clear. Also etched and lithographed labels.

Send Sample or Sketch for Price Quotation

DEPT. B

TECH PRODUCTS, INC.

442 Mosel Avenue • Staten Island 4, N. Y.

If you write maker identify as **IEN - 5915**

LIFTING and LOADING is *EASY* with double-duty hoist

Switches to truck crane in seconds.

Fits on 4-wheel shop frame.

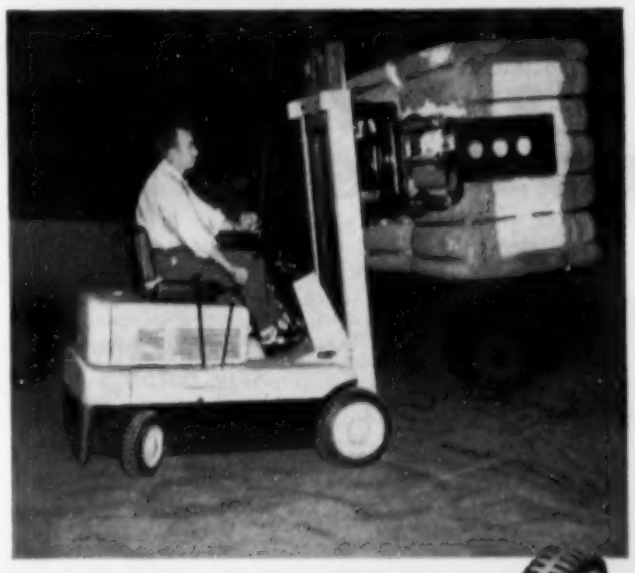
Easy, one-handed operation of hydraulic Unit "Utility Hoist" handles loads from 1,000 to 2,000 lbs. Choice of either manual or electrical operation. Instantly removable from 4-wheel floor truck to well mounted on truck bed, work bench, loading dock or machine tool. Write for prices, complete information.

UNIT MFG. CO. 1221 HARMON PLACE MINNEAPOLIS, MINN.

If you write maker identify as **IEN - 5916**

Goodyear Industrial Tires are right because they're job-fitted

—by your Goodyear Dealer—distributor of America's most complete line of Industrial Tires



Solid Fact For Solid Users – Get Goodyear's even-wearing Xtra Cushion Solid Tire in the All-Service Tread (shown above) for superior traction and greater cushioning.

All-Service Tread Xtra Cushion

Smooth Solid

All-Weather Tread

Rib All-Weather Pneumatic

Semi-Pneumatic Cushion

ARE you using the wrong industrial tires in your operation—are they causing costly delays—increasing your "down time"? Call your Goodyear Dealer and let him recommend "the right tire for the right job"—Goodyear Industrial Tires that are *three ways right*.

RIGHT SIZE—*for your equipment.* Goodyear has over 100 different solid tire types and sizes plus a full line of pneumatic and semi-pneumatic tires.

RIGHT TREAD—*for your plant's floor surfaces.* Smooth and Grooved for easy rolling. All-Service or the famous All-Weather, wherever traction is needed.

RIGHT COMPOUND—*for longer tire life.* Goodyear offers you either UNiversal chip-resistant or Neoprene oil- and acid-resistant compound at no extra cost.

For a free job-fitted tire appraisal in your plant, call your local Goodyear Dealer or write: Goodyear, Industrial Tire Sales, Akron 16, Ohio.

USE THE RIGHT TIRE FOR THE RIGHT JOB—USE

GOODYEAR

INDUSTRIAL TIRES

Xtra Cushion, All-Weather, All-Service—
T. M.'s The Goodyear Tire & Rubber Company, Akron, Ohio.

If you write maker identify as IEN - 5918

You Get the BEST! in METAL STAMPINGS WASHERS PARTS ASSEMBLY WORK from Quadriga

SEND TODAY FOR THIS VALUABLE 16-PAGE BOOKLET

Contains complete data on:

TENSION WASHERS	DISHED BLANKS
FRICTION WASHERS	GENERAL STAMPINGS
FINISHING WASHERS	PROGRESSIVE AND COMPOUND DIES
WIRE TERMINALS	STANDARD GAUGES
BLANKING DIES	

We have a press capacity up to 150 tons—depth of draw to 4 in.

THE QUADRIGA MANUFACTURING CO.
215A West Grand Avenue • Chicago 10, Illinois

If you write maker identify as IEN - 5921

CALCULATING . . Electric instruments for quality control in moving process

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

Eliminates analysis

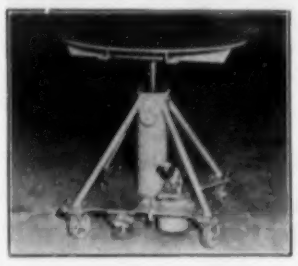
A quick check of average thickness and standard deviation of tested samples, such as yarn, wire, strip metal, photographic film, rope, plastics in continuous moving processes, is provided by these two new integrating instruments. One instrument is current integrating design. The other is current squared integrating. The pointers on both instruments stop instantly for accurate indication when current ceases to pass through their coils.

The current integrating instrument has a permanent magnet moving coil driving mechanism so the speed of its pointer, at any instant, is proportional to the current going through the coil at that instant. The current squared instrument has a dynamometer type driving mechanism so the speed of its pointer at any instant is proportional to the square of the current passing through it at that instant.

If you write maker identify as IEN - 5922

ELEVATOR . . Hydraulic lift table with revolving top, has 1 ton rating

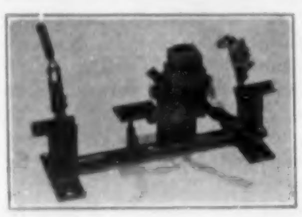
Source: RAYMOND CORPORATION
35-121 Madison St., Dept. IEN, Greene, N. Y.



Available to order

A circular top, free to revolve, is now available on the company's standard portable lift table. The assembly provides a 16-in. range in height between 28 and 44 inches. Lift action is by a foot operated pump mounted on the base beside a floor lock. Depressing a second pedal on the pump assembly releases the oil beneath the piston so the table can return to "down" position when desired.

If you write maker identify as IEN - 5923



New fixture is offered by Erico Products Co., 2070 E. 61st Pl., Dept. IEN, Cleveland 3, Ohio, to complete its Cadweld connection between a welding cable and an electrode holder. It is shown ready to place a cable and holder and to pour the connection joint into the mold.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5925

Faster than a 3 to 12-man crew, this NEW Tennant Sweeper cleans a 48" path, usually does a 2-hour handsweeping job in 10 minutes.

Has these exclusive features: reverses instantly . . . requires only 3 controls for 95% of the work . . . can dump 700 lb. load in 30 seconds. All moving parts 100% protected against grit. EXTRA-rugged and *built to last 2 to 3 times longer* than other industrial sweepers. Gas or electric; 24" to 48".

Write for details.

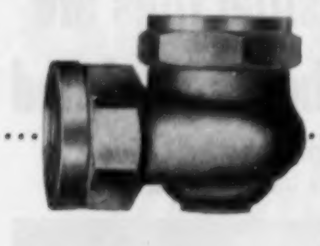
TENNANT ESTABLISHED 1870

G. H. TENNANT CO.
2574 N. 2nd Street
Minneapolis 11, Minn.

POWER SWEEPERS

If you write maker identify as IEN - 5919

SPRAYING SYSTEMS CO.



for lower cost and better performance

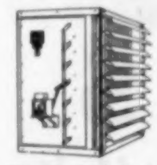
SPRAY NOZZLES Modern design. Precision machining. All materials. Thousands of standard industrial spray nozzle types and sizes to choose from. Years of proved experience at your service.

write for this great new catalog today

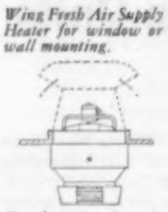
Ask for our new 48 page Catalog No. 24 . . . the most comprehensive spray nozzle catalog ever produced. Yours for the asking.

SPRAYING SYSTEMS CO.
3208 Randolph Street • Bellwood, Illinois

If you write maker identify as IEN - 5926



Wing Fresh Air Supply Heater for window or wall mounting.



Fresh Air Supply Heater for mounting in roof or monitor opening.

When air is exhausted from paint spray booths, from grinding, casting, chemical processing or other plant operations or is used in combustion, it must be replaced. Wing Fresh Air Supply Heaters provide the finest means of replacing exhausted air and supplying fresh air at the right temperature, winter and summer.

WING FRESH AIR SUPPLY HEATERS require no extensive duct work. They draw in the outside air at prevailing outside temperature and pass it through multiple by-passes and heating elements. The hot and cold air mix almost instantly assuring uniformly warm air at the outlet.

The heating coils can never freeze as they can where temperatures are controlled by throttling the steam supply. Write for Bulletin.

L. J. Wing Mfg. Co. 160 Vreeland Mills Rd., Linden, N.J.

If you write maker identify as IEN - 5920

thousands of users PROVE "HI-TEMP" **C-5 THREAD COMPOUND** IS BEST FOR ALL STUD THREADS and STAINLESS STEEL APPLICATIONS

- speeds up dis-assembly time
- prevents stud breakage
- eliminates pitting of stainless steel

Let us SEND you a FREE SAMPLE so you can PROVE to YOURSELF that C-5 will lick your toughest stud breakage problems!

To assure easy maintenance on products having threaded assemblies many leading product engineers have specified the use of Fel-Pro C-5 as an anti-seize coating on stud threads prior to final production line assembly.

Fel-Pro's exclusive Colloidal-Copper formula allows for easy separation and reduces stud breakage of threaded assemblies after long exposures to extreme temperatures. It eliminates pitting of stainless and alloy steel even where dissimilar metals are joined.

Conduct your own tests with C-5 "Hi-Temp" at our expense. Write on your company letterhead for Free Sample and complete data sheet TODAY!

594

FELT PRODUCTS MFG. CO. 1523 Carroll Ave. • Chicago 7, Ill.

If you write maker identify as IEN - 5924

A PAID NEWS ADVERTISEMENT BY CARBORUNDUM COMPANY

MOUNTED WHEELS AND POINTS

How they speed production told in free booklet

You can rough or finish grind, deburr, chamfer, break corners . . . do dozens of production line operations fast, safely with Mounted Wheels and Points by CARBORUNDUM. How they save hours of production time over slow, tedious hand finishing operations is shown in this free booklet. The wide range of shapes and sizes of these abrasive wheels permits grinding and finishing on any surface—flats, contours, hard-to-reach areas, inside diameters of all types. You can use them with maximum economy on portable grinders or all types of internal grinders. This booklet, "Mounted Wheels and related Abrasive Products by CARBORUNDUM" gives you complete information . . . tells you what types of abrasives are recommended for all kinds of metals and some non-metallics. Charts show the complete range of shapes and sizes available. Grading recommendations for many jobs are included—for both high speed portable grinding and internal grinding. A special section describes MX® Mounted Wheels . . . the wheels that finish as they cut. Another section covers coated abrasive products by CARBORUNDUM for rapid finishing with portable equipment.

Send for your free copy of this helpful booklet. Use the inquiry form provided by this publication—or write **The Carborundum Company,** Dept. IEN 81-49, Niagara Falls, New York.

"Carborundum" and "MX" are registered trademarks which indicate manufacture by The Carborundum Company, Niagara Falls, N. Y.

81-49

If you write maker identify as IEN - 5927

Headquarters for ALMCO Supersheen SPEED FINISHING **BARREL FINISHING COMPOUNDS**

40 different scientifically combined compounds. With the huge selection you can choose *the specific compound* which will provide optimum results on a given job. Also, special, custom made compounds. WHAT IS YOUR FINISHING PROBLEM? Write.

FREE CATALOG

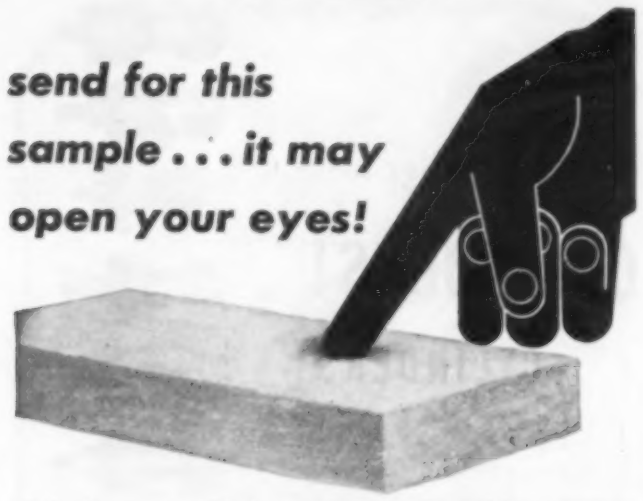
52 pages of money-saving facts, figures. "Before and after photos". The latest on equipment, compounds.

ALMCO Supersheen

AMERICA'S LARGEST MANUFACTURER OF ADVANCED BARREL FINISHING EQUIPMENT—MATERIALS AND COMPOUNDS

ALBERT LEA, MINNESOTA

If you write maker identify as IEN - 5928



A simple request will bring you a sample of one of the most amazing materials ever developed by science. It is Tufflex, the fiber felt, and it's cutting production costs—adding quality—in many industries today. Tufflex is downy soft—amazingly resilient. It cushions. It withstands heavy impact blows. It insulates. It deadens sound. It is easily fabricated to any size or shape. Tufflex is available in a variety of densities and thicknesses—and in moisture resistant and fire retardant forms. Learn more about the many new uses for Tufflex—send today for your sample and complete information.

Wood Conversion Company, Dept. 126-54, First National Bank Bldg. St. Paul 1, Minnesota

TUFFLEX*

Guaranteed by Good Housekeeping

*REG. U. S. PAT. OFF.

If you write maker identify as IEN - 5929

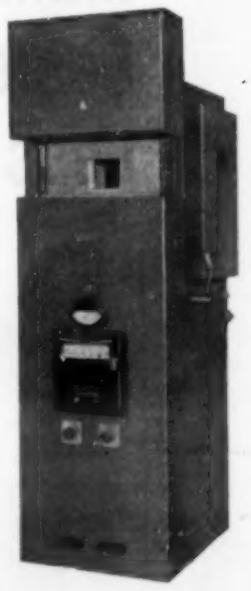
BURRELL "For Scientists Everywhere"

LABORATORY FURNACES

DUAL-RANGE

Box and Muffle Type

FOR HIGH TEMPERATURES UP TO 2650° F



Model 30 (pictured) Automatic temperature control. From 600° F. to 2000° F., use for ashing, drawing, igniting, tempering, etc. Above 2000° F., for sintering, melting, clinkering, fusing and high speed hardening. For use with 230 volt, 50-60 cycle, single phase power supply; automatic controller for 115 volt, 50-60 cycle, single phase.

CAT. NO.	ITEM	PRICE
37-442	Box Muffle Furnace, Model 30— (Heating chamber 7" wide x 8¼" deep x 4" high)	1300.00

For other models—ask for Bulletin No. 315

UNIT-PACKAGE

Tube Furnaces

MODEL H-1-9 (pictured) For high temperature testing to 2650°F. For the determination of carbon and sulfur by combustion in ferrous metals. Available for one, two and four tubes. For use with 115 or 230 volt, 60 cycle, as specified.

For other models—ask for Bulletin No. 310

CAT. NO.	ITEM	PRICE
24-934	One Tube Furnace, Model H-1-9	585.00
24-944	Two Tube Furnace, Model H-2-9	600.00
24-954	Four Tube Furnace, Model H-4-9	850.00

Prices listed are F.O.B. Pittsburgh, Pa.

BURRELL CORPORATION

Manufacturers and Distributors of SCIENTIFIC APPARATUS and LABORATORY CHEMICALS

2223 Fifth Avenue, Pittsburgh 19, Pennsylvania

If you write maker identify as IEN - 5931

HAMMER . . Pneumatic tool operates at 3,000 blows per minute

Source: DOTMAR INDUSTRIES INC. 103 N. Burdick St., Dept. IEN, Kalamazoo, Mich.

Bulletin 154

Airmite trade names a new air operated hammer weighing 3½ lb. and measuring 7 in. in length. It is operated by a trigger type valve and is adjusted for impact intensity by turning a screw in the handle. Operation is essentially without "kick" due to the high speed reciprocation.

Tools are held in a spring grip chuck. **Safety ports** release air when the tool is idling. It will not operate unless it is pressed against the work. Air pressure is required at 40 lb. or more. The company is prepared to supply a range of tools for various purposes.

If you write maker identify as IEN - 5932

ADHESIVE . . Phenolic liquid for fabrics, glass, metal, plastic

Source: H. V. HARDMAN COMPANY 571 Cortlandt St., Dept. IEN, Belleville 9, N. J.

Technical data upon request

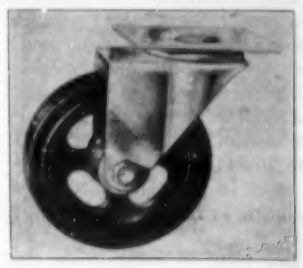
Phenoweld No. 7 is a new modified phenolic liquid adhesive for use on fabrics, glass, metal, thermosetting plastics, wood. The bond line, after curing, is resistant to attack by gasoline, kerosene, mineral oils, water, mixtures of polar and non-polar solvents. Storage life is about 6 months at 70 deg. F.

Application is on cleaned mating surfaces that are to be bonded after wiping with a solvent such as carbon tetrachloride. The material is applied and allowed to air dry after which the parts are placed together and held under gentle pressure. Curing requires about 20 min. at 300 deg. F.

If you write maker identify as IEN - 5933

CASTER . . Ball bearing design has 6 in. wheel, rates to 450 pounds

Source: MIDWEST PRECISION CORP. 301 Hillsdale, Dept. IEN, Jackson, Mich.



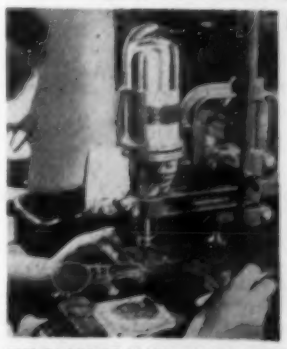
Series 30

PressCoin is a new caster with a pressed steel frame, shaped for strength and stiffness combined with light weight. The top plate and upper raceway are separate units. A king pin retains the bearing balls in the races. The top plate measures 4¾ by 4⅝ in. and carries holes to take $\frac{7}{16}$-in. bolts. The wheel measures 6 by 1⅞ inches. It is available in semi-steel, solid rubber, Moldon rubber and plastic. The semi-steel and plastic unit rate 450 pounds. The other two rate 310 pounds.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5934

"400% Faster!" "Output Up 110%!" "Costs Cut 64%!"



EYE GLASS FRAMES. Driving tiny optical screws — traditionally an "impossible" job for a power driver. Yet Millers Falls is doing it — and cutting labor costs 64%.

Three examples of how thousands of companies save time and money with Millers Falls "Adjustomatic"® Clutch Electric Screw Drivers

TRAVERSE TRACKS. Drive screws too tight — and tracks crush. Not tight enough — and stops loosen. Millers Falls' record on this job: Rejects — none. Speed — up 400%.

MINIATURE MOTORS. Problem: To drive tiny, self-tapping screws without stripping or splitting a thin plastic housing. **Solution:** Millers Falls No. 52's. **Result:** Production up 110%.

There's a Millers Falls driver that's right for practically every driving problem

Write for full information or let us arrange for a demonstration.

MILLERS FALLS COMPANY
Greenfield, Mass.

MILLERS FALLS TOOLS

The Mark of Superiority

If you write maker identify as IEN - 5935

LAZY LIQUIDS

KEPT ON THE MOVE

Maybe it is Asphalt, Rosin, Wax, Sulphur, Syrup or some other LAZY Liquid. Heat them and they flow more readily. Heat the pipes that convey them also—and they continue to flow.

Steam, Hot Water, Hot Oil, or Dowtherm circulated through Jacketed Piping and Fittings will do just that. Keep these otherwise lazy liquids on the move.

Parks-Cramer Jacketed Pipes come in sizes 1¼", 1½", 2", 3", and 4"—inside dimensions. Jacketed fittings include: two- and three-way Plug Cocks, Tees, 90° and 45° Elbows, Crosses, Expansion Joints and Relief Valves. Send for Bulletin 152 E.

Parks-Cramer Company
ENGINEERS and CONTRACTORS
Fitchburg, Massachusetts

If you write maker identify as IEN - 5936

FREE BOOKLETS

TELL ALL ABOUT ALUMINUM WIRE

Get the full facts about what a wonderful job U. S. Rubber Aluminum Wires and Cables are doing for the electrical industry. These two clearly written, informative booklets are packed with data on specifications, standards, photographs showing stripping, joining, soldering—installation facts of all kinds, plus property tables. These booklets are FREE. Send for your copies today!

UNITED STATES RUBBER COMPANY

Electrical Wire and Cable Department

ROCKEFELLER CENTER • NEW YORK 20, N. Y.

If you write maker identify as IEN - 5937

22.6% more air

PER POWER DOLLAR

By actual test, DeVilbiss air compressors deliver as much as 22.6% more air per power dollar. Efficiency like this combined with great care in manufacture and assembly are reasons why a DeVilbiss compressor pays for itself out of power savings alone. Full range of pressure. Types available from ½ through 15 h.p. Write today for full details.

DEVILBISS THE DEVILBISS COMPANY
Toledo, Ohio

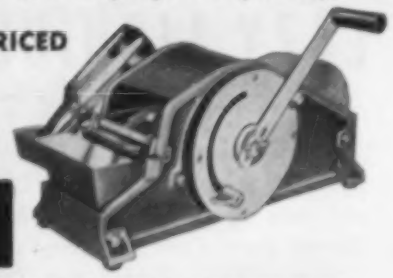
Barrie, Ontario • London, England • Santa Clara, Calif.

If you write maker identify as IEN - 5938

Another Triumph of Derby's Designing and Engineering Skill!

THE MEDIUM PRICED

Super DERBY "152"



SENSATIONAL DISPENSER DELIVERS PREDETERMINED LENGTHS OF GUMMED TAPE UP TO 30", (1" TO 3" WIDE)

Priced far lower than any machine of comparable quality now on the market, the new Derby "152" has amazing versatility and durability. Its exclusive Derby "Moisture Control System" provides a completely moistened tape every time—and its unique brush design makes unnecessary the usual two brush arrangement. For industrial packaging, specify Derby "152".

A DERBY FIRST
Stainless steel cut-off blade, guaranteed for life of machine.

LOOK AT THESE QUALITY DERBY FEATURES

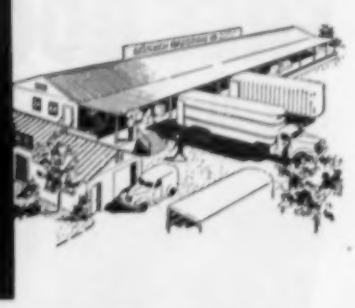
- Exclusive spring clutch feed
- Visible auxiliary water reservoir
- Adjustable, vari-length handle
- Larger interlocking side frame construction
- Measuring feed stop
- Automatic tape cut-off
- Visual measuring scale
- Water heater available at extra cost

See your dealer or write

DERBY SEALERS INC. Derby, Conn.

If you write maker identify as IEN - 5939

need permanent buildings in a HURRY?



Just name the space you need. It's yours—almost overnight—in an Armco Steel Building. Clear span interiors range from 4 to 40 feet wide. Lengths are practically unlimited.

Interlocking STEELOX panel construction cuts job-site labor and speeds erection. You are assured an early "move-in" date.

In addition to low first cost, you save on maintenance. Armco Steel Buildings are noncombustible—and there is nothing to warp, rot or crack. You get years of low-cost, trouble-free service.

ARMCO STEEL BUILDINGS

ARMCO DRAINAGE & METAL PRODUCTS, INC.
3124 Curtis Street, Middletown, Ohio

ARMCO

WRITE FOR THE COMPLETE MONEY-SAVING STORY

If you write maker identify as IEN - 5940

how to cut your costs with **upson** wood fiber panels and cut-outs

Send for FREE sample kit today. Discover how to cut costs, speed output with rugged, low cost Upson Wood Fiber parts and cut-outs.

You save because Upson will cut parts to fit your exact needs. And Upson's special equipment can apply low cost coatings for protection, color, waterproofing. Let Upson, as a specialist, combine operations and lower costs even more.

UPSON

upson LAMINATED WOOD FIBER BOARD AND SPECIALTIES

Handsomely packaged kit with 11 samples of cost cutting Upson Wood Fiber Panels plus 8-page folder. Yours FREE. Mail coupon.

THE UPSON COMPANY 235 UPSON PT., LOCKPORT, N. Y.
Please send me FREE sample kit.
NAME
COMPANY
STREET
CITY STATE

If you write maker identify as IEN - 5941

POLISHING . . Plate top stand holds optical polishing paper flat

Source: CRANE PACKING CO.
1800 Cuyler Ave., Dept. IEN, Chicago 13, Ill.

No dubbed work edges

A roll of 12-in. optical polishing paper, 50 ft. in length, is held in a recess at one end of this new polishing stand. The paper is threaded up and across a steel plate, or "stage," that has been precision lapped. The paper is clamped at two points across its length so a 12 by 12-in. section is held rigidly in place. It is made taut by raising the "stage" with two jack screws under the base.

A new section of paper can be brought into position after loosening the clamps, lowering the stage and feeding new paper from the roll. Principal application is in polishing work pieces prior to inspection during surface grinding or lapping operations in laboratories or on small polishing jobs.

If you write maker identify as IEN - 5942

STAPLING . . Pneumatic tool drives 14 gage 1/2 to 7/8 in. staples

Source: POWERS WIRE PRODUCTS CO.
1590 Monterey Pass, Dept. IEN, Monterey Park, Calif.

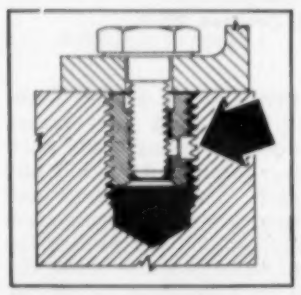
Please note our error

We call your attention to the address error in which we omitted the word "Monterey" from the address line in IEN-3363-54, when we described the company's new pneumatic stapling tool. In case the Post Office returns your inquiries please re-direct them.

If you write maker identify as IEN - 5943

FASTENING . . Threaded inserts to order with nylon locking plugs

Source: NYLOK CORPORATION
E. 14th St., Dept. IEN, Elmira Heights, N. Y.



To your order

The company announces availability of a new threaded insert with threads both inside and out to apply primarily in non-ferrous forgings, castings and extrusions as an anchoring means for a bolt or stud. The insert is made, normally, of steel in specified sizes and each one is fitted with a nylon plug.

The plug is flush with the crest of the threads, both inside and outside, so it is compressed by the threads in the casting in which the insert is applied and also by the threads in the bolt or stud. It provides locking action against loosening due to vibration. The bolt or stud can be threaded out and rethreaded repeatedly.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5944

For the height of SAFETY
WERNER ALUMINUM INDUSTRIAL STAGING EXTENSION LADDERS, ETC.

Write for further details.

This maintenance free lightweight lifetime aluminum staging is a product of the R. D. Werner Company, largest manufacturer of aluminum staging ladders and industrial extrusions.

1. Open side fire ladder construction for maximum strength, minimum weight.
2. Swaged ring construction, a patented Werner feature, torque tested up to 4500 inch pounds.
3. Skid proof, dimpled deck, designed for tough use, longer wear.
4. Riveted construction — aircraft type aluminum extrusions used throughout.

Manufacturers—Basic Aluminum Extrusions and Roll-formed Products

R. D. WERNER CO. INC. ALUMINUM

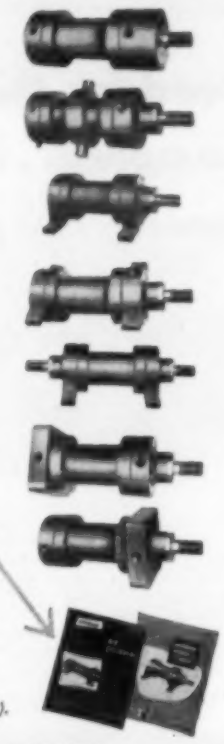
295 FIFTH AVENUE, NEW YORK 16, N. Y. • FACTORIES: GREENVILLE, PA. • OSHAWA, ONT., CANADA

If you write maker identify as IEN - 5945

CYLINDERS!

CYLINDERS!

CYLINDERS!



Lindberg builds a complete line of standard heavy duty air and hydraulic cylinders . . up to 12".

Lindberg also builds super heavy mill type cylinders for extremely tough and heavy jobs.

Ask for bulletin #731 (air) . . #701 (hydraulic).

LINDBERG AIR . . HYDRAULIC CYLINDERS

Lindberg Air and Hydraulic Division
Lindberg Engineering Co. • 225 North Laflin Street • Chicago 7, Illinois

If you write maker identify as IEN - 5946

Make Maintenance Easier, Less Costly

IBM ELECTRONIC TIME AND PROGRAM SIGNALING SYSTEMS

. . . with 12-hour self-regulation synchronize clocks and signals to the second . . . control utilities—automatically.

You need no special unit-to-unit wiring. Functions are supervised electronically—through regular AC lighting lines • Simple installation saves you time, cost, effort • System may be expanded or altered inexpensively.

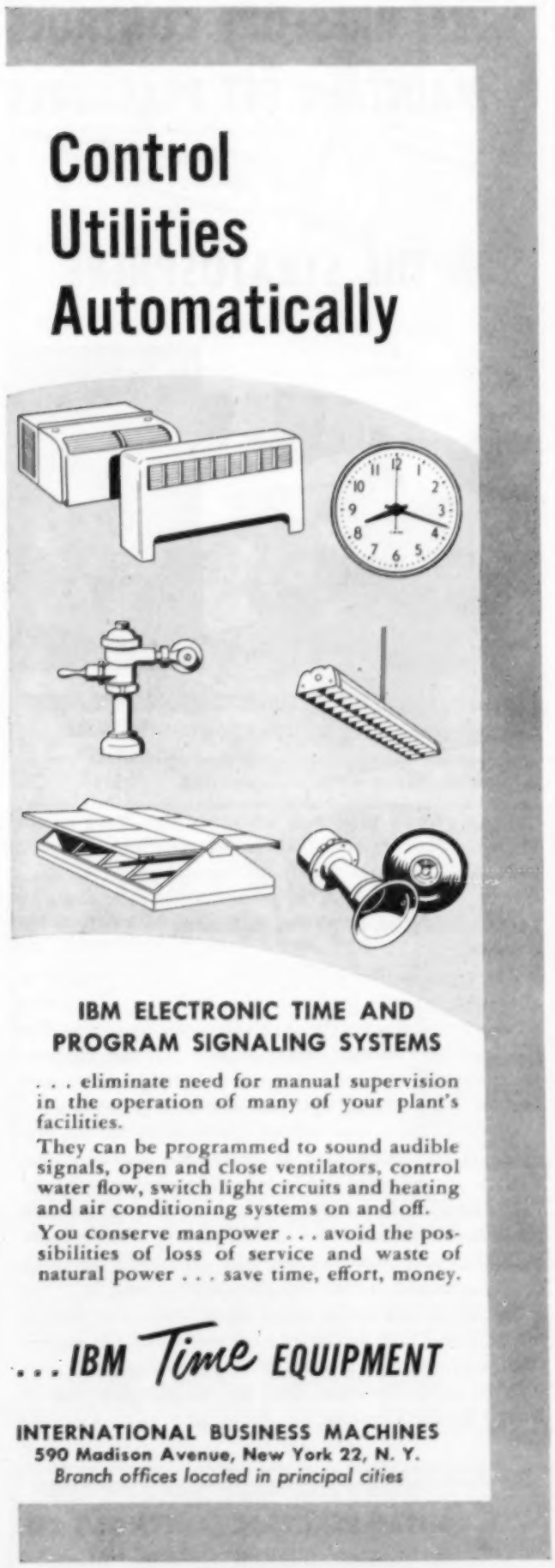
Write or call IBM for full information.

You're RIGHT ON TIME with

IBM

If you write maker identify as IEN - 5948

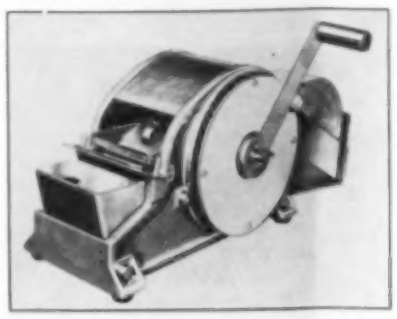
If you write maker identify as IEN - 5949



If you write maker identify as IEN - 5951

DISPENSING . . Hand operated unit to handle water soluble gummed tape

Source: DERBY SEALERS INC.
102 Seymour Ave., Dept. IEN, Derby, Conn.



Anniversary design

Model 15, Illustrated, and Model 152 are new gummed tape dispensers for hand operated delivery of Kraft water soluble gummed tape measuring 1 to 3 in. in width. Both machines can be set to dispense any length to 30 in. upon turning the operating crank. A spring clutch feed is set for desired length. It operates in connection with a visual measuring scale, water compartment and cutting mechanism with guillotine blade. This cut-off mechanism is guaranteed for the life of each machine.

Model 15-F is a variation of the Model 15 to include an auxiliary water bottle and support which keeps the moistening tank filled as water is used up. Model 15-35 is an adaptation of the basic unit to take 35 lb. gummed tape. This machine delivers any length to 20 in. and will handle widths from 1 to 3 inches. A water heater attachment is available for those units that are equipped with the visual auxiliary water reservoir. The machine is designed so the steel tape roll compartment folds into the body to occupy minimum space during shipment and storage.

Model 152 is a heavy duty design of Model 15 with an adjustable length operating lever and interlocking side frames that contain the tape roll. An auxiliary water fountain is standard equipment on this unit.

If you write maker identify as IEN - 5952

MAGNIFYING . . Polarizing microscope for quality and production control

Source: BAUSCH & LOMB OPTICAL CO.
635 St. Paul St., Dept. IEN, Rochester 2, N. Y.

Bulletin D-130

Illustrated is Series I in the company's line of Dynoptic polarizing microscopes. It employs a monocular tube, rack-and-pinion coarse adjustment, ball bearing and roller fine adjustment graduated in 1 micron divisions. The nose piece can be centered. The plano-concave mirror is fitted with a trunnion mount. The ball bearing graduated pre-centered rotatable stage employs a vernier to read to 6 min. of arc. There is a stage clamping screw, stage clips and a slot for retardation plates.

A Polaroid analyzer and a fixed focus Bertrand lens both flip into place. A variable focus condenser is equipped with an iris diaphragm. The Polaroid polarizer is graduated and rotatable. Two objectives provide 10X and 45X magnification. One 7.5X and one 10X Huygenian eye piece are equipped with cross hairs and focusing eye lenses. The microscope is packaged in a wood cabinet. It lists at $477.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5953

Whenever normal lighting is interrupted—no matter what the reason—you get adequate emergency lighting INSTANTLY. Your customers and employees are safeguarded against injuries; property damage, pilferage, loss of process control is minimized. Exide Lightguards are UL-approved and can be plugged in anywhere. Operates instantly—each lamp illuminates up to 10,000 sq. ft. Exide battery in one lamp unit provides power for more than 8 hours of continuous lighting. Once normal power is restored, automatic controls recharge the dependable, long-life, trouble-free Exide battery.

WRITE for facts on why Exide Lightguards guarantee more protection for every dollar you invest in such equipment.

Exide INDUSTRIAL DIVISION,
The Electric Storage Battery Co., Philadelphia 2, Pa.

If you write maker identify as IEN - 5954

SOMETHING NEW IN HYDRAULICS

DENISON low-priced 2000 psi Series M Relief Valves

NOW . . . a wider range of pressure regulation than found in any other relief valve used in 2000 psi circuits today.

GET FACTS. New Free Bulletin No. 152 gives operating characteristics, capacities, sizes and dimensions for new line of Denison Series M Relief Valves. Write for it today.

THE DENISON ENGINEERING COMPANY
1150 DUBLIN ROAD • COLUMBUS 16, OHIO
LEADING DESIGNER AND MANUFACTURER OF HYDRAULIC PRESSES AND COMPONENTS

If you write maker identify as IEN - 5955

INDUSTRIAL FLOOR ENAMEL
less than 10% wear
more than 5 years' service

On a concrete floor. Under tough conditions, too—64,000 sq. ft. of bottling and shipping operations. Production area, truck-washing stalls, loading area, garage space . . . the whole floor was coated with a maroon enamel, air-dry finish based on BAKELITE Phenolic Resins. The coating was wet-buffed into the set cement with a rotary steel-wool floor brush. It was quick. Operations weren't seriously interrupted. And it has been exceptionally durable, with minimum maintenance.

There are cost-saving coatings based on BAKELITE Resins—phenolic, vinyl, polyethylene, styrene—for practically every industrial purpose, construction and equipment surface. Acid-, alkali-, oil-, grease-, and chemical-resistant, it will pay you to investigate the applications of these coatings.

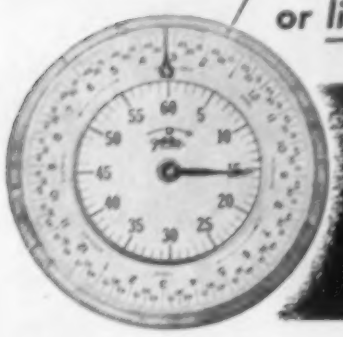
For names of suppliers, and a free copy of our booklet, "BAKELITE RESIN COATINGS FOR GENERAL INDUSTRY," write Dept. WX-3.

Be sure to visit BAKELITE's Exhibit, National Plastics Exposition, Public Auditorium, Cleveland, Ohio, June 7-10.

BAKELITE
TRADE-MARK
RESINS FOR COATINGS
TRADE MARK
BAKELITE COMPANY
A Division of Union Carbide and Carbon Corporation
UCC
30 E. 42nd Street, New York 17, N. Y.

If you write maker identify as IEN - 5957

when it's time GET IT... FOR ACTION by bell buzzer or light



WITH

ZENITH Program Timers

Wherever schedules must be maintained, protect your operations against error, delay or omission of vital time signals. Be sure, with the precision-engineered dependability of ZENITH PROGRAM TIMERS. *Once set, they don't forget.*

Operate your time signals automatically . . . at any 5 minute period of each 24 hours—2½ minute periods—with the Zenith Duplex model. Thousands of Zenith units are faithfully serving in: factories, chemical and processing plants, schools, hotels, institutions, airports, railroads, watchmen reporting systems. Zenith can give you the same dependable service.

See Classified Telephone Directory for Local Representative . . . or write

ZENITH ELECTRIC CO.
141 West Walton Street Chicago 10, Illinois

If you write maker identify as IEN - 5958

NEW SIZE 2U IMPACTOOL

This MIGHTY MITE is a real Multi-purpose tool

The new 2U Impactool will do all these jobs—and do them fast—

- run and remove nuts
- drill
- ream
- tap
- drive and remove screws
- drive and remove studs
- saw holes
- drill masonry
- bore wood
- extract broken studs
- run wire brushes

This newest and lightest Impactool has the time-proven Ingersoll-Rand impact mechanism that has an unmatched reputation for power and dependability in both air and electric Impactools.

Ask for a demonstration of this new, powerful little Impactool. You'll find it featured by leading automotive jobbers and industrial distributors from coast to coast.

SPECIFICATIONS

Capacity, bolt size	¼"	Impacts per minute	2100
Weight, less cable	5 lbs.	Square Socket Driver	⅜"
Free Speed	1750 rpm	Standard Voltage	110 volts AC-DC

Ingersoll-Rand
11 Broadway, New York 4, N.Y. 18-20
Originators of Impactools—Air and Electric

If you write maker identify as IEN - 5959

Do MORE work at LESS cost with Ramset JOBMASTER

- For light-duty anchoring into concrete or steel, use the JOBMASTER with ¼" fasteners.
- For moderately heavy work, attach a PLUS-POWER Unit and set ⅜" fasteners at ½ less cost for power charges.
- For 1" mild steel or for hardest concrete, no other tool has the penetrating force of the SUPER-POWER JOBMASTER for ⅜" studs or drive pins.
- This choice of 3 tools and 65 Tru-Set fasteners is one reason why more contractors use RAMSET than all other powder-actuated tools combined.
- Ask for on-your-job demonstration of how RAMSET SYSTEM cuts your fastening costs.

Ramset Fasteners, INC. RAMSET DIVISION, OLIN INDUSTRIES, INC.
12143 BEREA ROAD • CLEVELAND 11, OHIO

FIRST IN POWDER ACTUATED FASTENING — AN Olin PRODUCT

If you write maker identify as IEN - 5960

PRESS . . Solenoid operated to mark, punch, rivet, stake, swage

Source: BLACK & WEBSTER INC.
445 Watertown St., Dept. IEN, Newton 58, Mass.

125 blows per minute

Impact action and an open-back C-frame housing for automatic feed characterize this new Model F assembly in the Electropunch line of solenoid operated presses, previously described IEN-14145-53. The new machine delivers uniform impact, adjustable from a few ounces to 3,500 pounds.

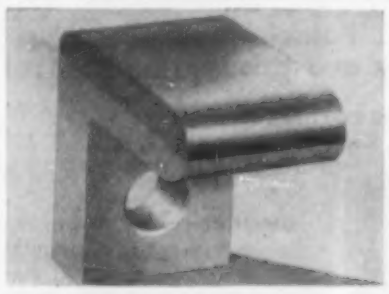
The press employs simple interchangeable tooling that starts with inexpensive tool blanks. These include a punch or staking blank made of 1-in. drill rod with a turned ½-in. shank that fits into the spindle hole and a bolster plate, or locating tool blank, made of a 3-in. cast iron slug with a turned ¾-in. shank that fits into the base pad hole.

Two designs of the Model F machine have impact rating to 2,000 and to 3,500 pounds. Overall dimensions in both cases are 9½ by 9 by 20 inches. Throat depth measures 5 inches. Shut height is 3¼ inches. List prices are $90.25 and $108.75.

If you write maker identify as IEN - 5961

CONTACTS . . Copper and graphite are pressure molded from powder mix

Source: GIBSON ELECTRIC CO.
8353 Frankstown Ave., Dept. IEN, Pittsburgh 21, Pa.



Powdered metal parts

Gibsiloy UC-5 and UC-7 are new powder metal contacts developed for applications requiring high conductivity and self-lubricating non-sticking, non-galling properties. The unit illustrated is a contact employed in an engine starting contactor for a diesel electric locomotive. It is faced with Gibsiloy UC-7, one of the two new materials.

The company is prepared to supply complete contact assemblies or will braze the contacts to supports provided by the user. Each contact is treated to provide a surface satisfactory for brazing with silver solder.

If you write maker identify as IEN - 5962

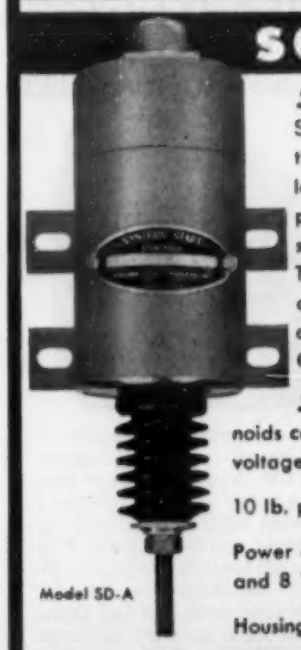
Pedasine is a new electrically operated device to produce muscular relaxation, particularly for tired feet. It plugs into a 110-volt circuit, stands on the floor. The individual with the tired feet rests his feet upon it. It is particularly suited for plant hospitals, first aid stations and rest rooms. It is manufactured by R. A. Fischer & Co., 517 Commercial St., Dept. IEN, Glendale 3, Calif. List price is $75.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5963

Continuous Duty - D.C.

SOLENOIDS



Synchro-Start MODEL SD SOLENOIDS have an exceptional amount of power over a long stroke. The sealed casing protects these solenoids from seepage of dust and liquids. They are available with standard terminal studs (Model SD) or with the aircraft type AN Connector (Model SD-A).

Specifications — SD Solenoids can be furnished in all standard voltages up to 115 Volts D. C.

10 lb. pull over 1½ inch stroke.

Power consumption, 550 Watts pulling and 8 Watts holding.

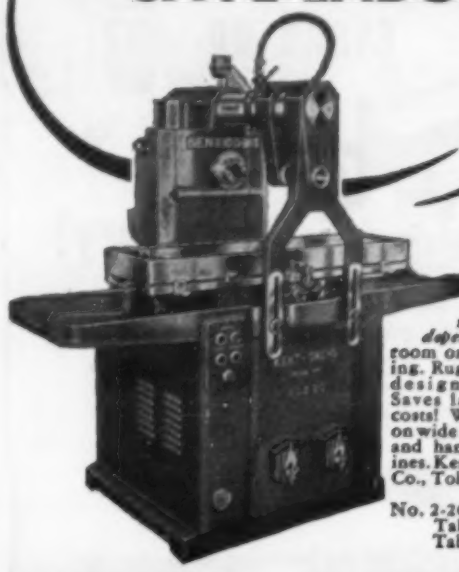
Housing dimensions, 4⅝" x 2½".

SYNCHRO-START PRODUCTS, INC.
8151 N. RIDGEWAY AVE. • SKOKIE, ILLINOIS

Manufacturers of AUTOMATIC ENGINE CONTROLS SAFETY CONTROLS • OVERSPEED GOVERNORS and CONTROL EQUIPMENT

If you write maker identify as IEN - 5964

MILL IT *faster*.. SAVE LABOR!



Kent-Owens advanced features mean *speed, accuracy* and *dependability*... in tool room or production milling. Rugged . . . simple in design and operation. Saves labor . . . reduces costs! Write for bulletins on wide range of hydraulic and hand-operated machines. Kent-Owens Machine Co., Toledo, Ohio.

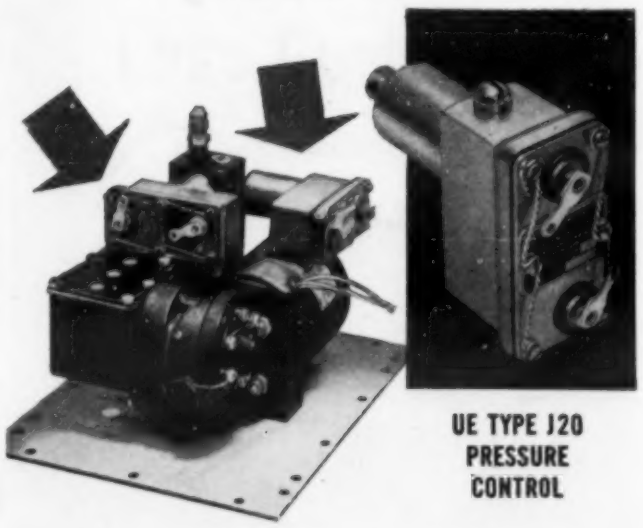
No. 2-20 Milling Machine
Table, 42" x 12"
Table travel, 20"

KENT-OWENS
Milling Machines

If you write maker identify as IEN - 5965

UE PRESSURE CONTROLS MAINTAIN SET PRESSURES

IN THE STRATOSPHERE



UE TYPE J20 PRESSURE CONTROL

The electronic equipment in today's high-flying aircraft requires uniform pressure conditions at predetermined levels in order to function accurately. At current operating altitudes, this pressure is supplied by pressurization units made by Eastern Industries, Inc. — and maintained by *UE* Type J20 controls.

The pressurization unit maintains a constant pressure at all times, between predetermined settings, thus assuring reliable performance of the plane's electronic equipment. The *UE* Type J20 Pressure Control automatically cuts the pressurization unit's motor in and out at those predetermined settings — thus assuring optimum electronic performance.

UE Type J20 — now offered commercially for the first time — is also being used in pressurized coaxial cables, R. C. A. ground radar, and in maintaining frequency bands.

United Electric manufactures a wide line of standard controls that are used in aircraft fuel purging systems, paper mill machinery, diesel engines, milk pasteurizers, room air conditioners and in countless other applications.

Special controls can be adapted from standard models, or can be custom built by United engineers working in cooperation with your own product development engineers.

Write today for information on the complete line of United Electric Controls.

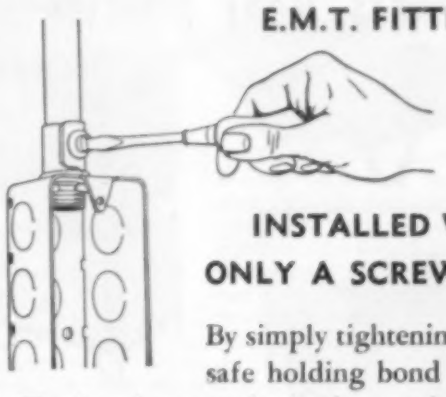
Standard and special thermostats and pressure switches

UNITED ELECTRIC CONTROLS CO.
80 School Street, Watertown, Mass.

If you write maker identify as IEN - 5967

VIBRATION PROOF

E.M.T. FITTINGS



INSTALLED WITH ONLY A SCREWDRIVER

By simply tightening a screw a safe holding bond is assured. The bond cannot be broken or loosened except by releasing the screw.

RE-USABLE • ECONOMICAL • CLOSE, ACCURATE FIT • PERMANENT GROUND • ELECTRO GALVANIZED • LISTED FOR CONCRETE TIGHTNESS

WRITE FOR BULLETIN 581

National Electric PRODUCTS CORPORATION

140 Stanwix St., Pittsburgh 22, Pa.

If you write maker identify as IEN - 5968

AERODYNAMIC PROBES

- We design and build thermocouples, pressure, velocity, direction and hot wire anemeter probes to solve your flow measuring problems.
- Probes made to your specific design.
- Aerodynamic Calibrations for all probes.
- Complete temperature and pressure measuring systems for your tests.
- Facilities for manufacturing large quantities of thermocouple probes.

FLOW INSTRUMENTATION for TURBO JET, RAM JET or ROCKETS

Our engineering staff is familiar with problems in fluid flow measurement. For further information write to

AERO RESEARCH INSTRUMENT COMPANY

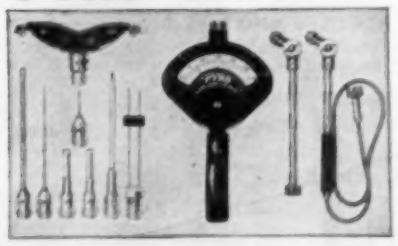
1911 N. HERMITAGE AVE. • CHICAGO 22, ILL.

If you write maker identify as IEN - 5969

PYRO SIMPLIFIED OPTICAL PYROMETER

Any operator can quickly determine temperatures on minute spots, fast-moving objects and smallest streams. Completely self-contained. No calibration charts or accessories needed. An accurate, direct reading Pyrometer that pays for itself by helping prevent spoilage. Weighs 3 lbs. Available in 5 temperature ranges (1400°F. to 7500°F.) Ask for free Catalog No. 85.

PYRO SURFACE PYROMETER



Designed to meet all plant and laboratory surface and sub-surface temperature measurements with selection of thermocouples and extension arms. The IMPROVED PYRO is quick acting, accurate, light-weight and rugged. It features large 4½" direct reading scale, automatic cold and junction compensator and shielded steel housing — all combined to offer highest precision, accuracy and dependability. Available in five standard ranges from 0-300° to 0-1200° F.

Ask for FREE Catalog #168

THE PYROMETER INSTRUMENT CO.

BERGENFIELD 21, NEW JERSEY

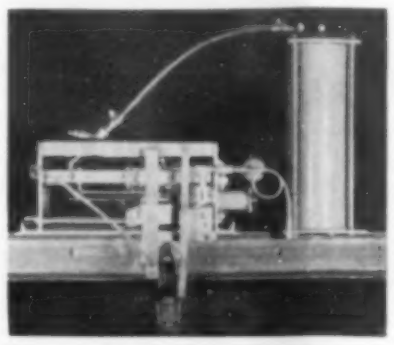
New Plant and Laboratory

Manufacturers of Pyro Optical, Radiation, Immersion and Surface Pyrometers for over 25 years

If you write maker identify as IEN - 5970

LUBRICATING . . Automatic unit to oil or grease conveyor trolleys

Source: MOORE LUBRICATOR CO.
355 Lynwood Lane, Dept. IEN, Milwaukee 14, Wis.



For any trolley spacing

The company announces general availability of its automatic lubricator for overhead conveyor trolleys, following a three year period of field test. The new unit fits a 3, 4 or 6 in. I-beam conveyor. It mounts on the I-beam, occupying 3 ft. of length and 20 in. of head room. Connection is made to a shop 50-lb. air line.

A head, carrying oil or grease delivery nozzle fittings, is assembled to travel with a trolley as the trolley comes into place. Movement with the trolley is through about 6 inches. During this time, the nozzle fittings make sustained straight line contact with lubricant fittings on the trolley and an air operated pump injects the lubricant. The moving head is then released and immediately returns to its original position for contact with the next trolley.

This cycle is repeated until an entire conveyor has been lubricated and the trolley, first contacted, returns to operate a stop that holds the lubricator out of action until it is manually or automatically returned. The lubricator can be installed without stopping a conveyor. A new combination unit is available for silicone lubricants, applies grease and oil alternately.

If you write maker identify as IEN - 5971

RECORDING . . Receiver-integrator computes and displays process flow

Source: FOXBORO COMPANY
42 Neponset Ave., Dept. IEN, Foxboro, Mass.

Plain or reset

A flow receiver and a counter make up a new Type-224 receiver-integrator. It has been developed for use with the company's Model 53 Consotrol recorder in a graphic process panel. The counter mounts on the front of the panel, as shown in the illustration, below the Consotrol instrument. It totalizes to 8 digits, or to 6 digits with a zero reset wheel. It takes 3¼ by 5½ in. of panel space. The receiver unit, composed of a bellows and a cam switch assembly, is enclosed in a small metal housing behind the panel with two wires connecting it to the counter.

Pneumatic signals, in a range from 3 to 15 lb., connect from a flow transmitter at the point of process measurement and are received by the bellows which positions a cam switch mechanism. It, in turn, produces an electric impulse to actuate the counter in correct relation to the flow measurement. Service calibration checks can be made during operation without requiring extra equipment. Integrators are available to totalize minute, hourly or daily rates.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5972

ALL COMERS!

HERE'S THE CHAMP . . .
YOU SUPPLY THE CHALLENGER

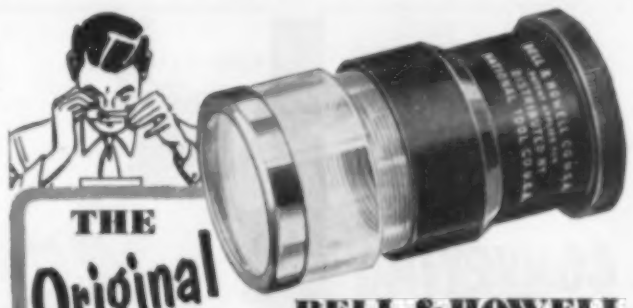
The difficult fluid, gas, or air transmission problem in your plant—We'll send you a Snap-Tite Hi-Flow quick connect disconnect coupling—double or single shut-off or straight-thru—any size ⅛" to 3"—Test it! in your Plant, under actual working conditions—You be the judge—If it doesn't do a better job than the coupling you're now using — Or solve your problem—Ship it back collect! Fair enough? Write today on your letterhead, briefly outlining your problem —We'll ship immediately.

Snap-tite INC

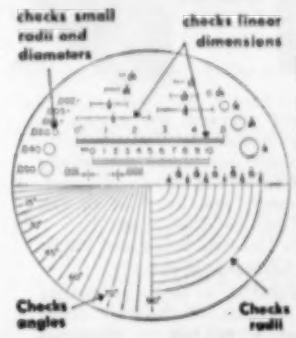
S. WOODROW

UNION CITY, PENNA.

If you write maker identify as IEN - 5973



THE Original BELL & HOWELL Pocket Comparator



Saves time and money inspecting small dimensions

● Here's *guaranteed* accuracy in checking small dimensions at a price any business can easily afford. Save time and money measuring wear on cutting tools, checking forms and dimensions of punches, dies and gauges—as well as chamfers, threads and small holes on production parts.

Thousands in use by America's leading precision manufacturers. It's the greatest time-saver since the micrometer!

price only $36.00 order today

A product of BELL & HOWELL CO. Distributed by

See Your National Tool Co. Representative or Local Jobber

NATIONAL TOOL CO.

11220 Madison Avenue Cleveland 2, Ohio

Write for FREE descriptive folder

If you write maker identify as IEN - 5974

CUT COSTS with the *New* MEAD MIDGET AIR CLAMPS

(Spring Return Air Cylinders)

These brand new, tiny Mead Midget Air Clamp Cylinders have only 1" bore. They are made in 3 standard lengths of stroke: 1", 2" and 3"—all with spring return. Like the famous H-1 and V-1 midgets, the new H-1-X models are for use where a little longer stroke is required in a minimum of space. Save countless hours of production time in clamping, locking, releasing, feeding, and in simplified design of work-holding fixtures.

New Industrial Air Power Catalog Ready!

It's full of suggestions for faster, cheaper production! Every plant engineer, production man, purchasing agent needs this Catalog illustrating, describing Air Cylinders, Valves, air-operated Presses, Chucks, Vises, Hammers, Drill Press Feeds, Work Feeders, Timers, semi-automatic combinations, etc. Write!

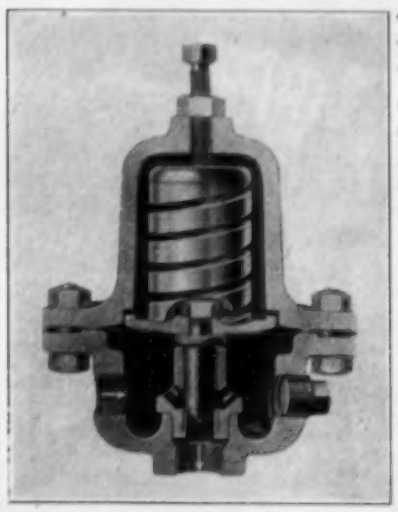
MEAD SPECIALTIES COMPANY

4114 No. Knox Ave., Dept. EA-54, CHICAGO 41, ILLINOIS

If you write maker identify as IEN - 5975

DIAPHRAGM RELIEF VALVE

for oils, gases, acids and many other fluids



The Cash Standard Type 123 Relief Valve operates smoothly in continuous relief, vacuum relief, or by-pass service. It is normally held shut by the spring but when inlet pressure exceeds the spring load, the valve opens just enough to maintain the predetermined upstream pressure. Sizes ⅜" to 2" with Iron, Bronze, Steel, Stainless or Monel Bodies. Trim, seat and seat ring of various special materials in combination meet the most exacting requirements. Inlet pressures range to 300 Psi. Temperatures to 700°F.

Details in Bulletin 975

A. W. CASH COMPANY

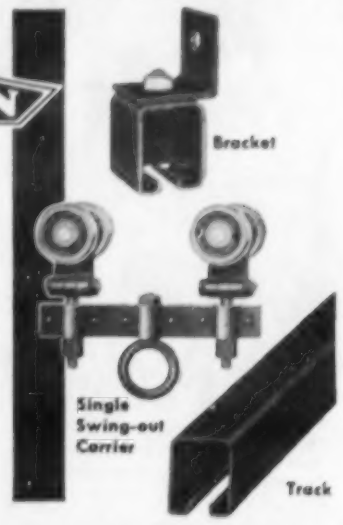
P. O. Box 551 • Decatur, Illinois

If you write maker identify as IEN - 5976

COBURN

OVERHEAD CONVEYING EQUIPMENT

simple, easy installation



Coburn track, brackets and carriers are simple in design . . . present no complicated installation problems. In fact, your own plant personnel can easily handle the job. Inexpensive re-arrangement or extension can also be made at any time because of the section design of Coburn Overhead Monorail.

Write for Catalog #220 to Coburn Sales and Engineering, 56 Sterling Street, Clinton, Mass.

THE COLORADO FUEL AND IRON CORPORATION • Denver and Oakland
WICKWIRE SPENCER STEEL DIVISION • Atlanta • Boston • Buffalo
Chicago • Detroit • New Orleans • New York • Philadelphia

1984

COBURN PRODUCTS
PRODUCTS OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL AND IRON CORPORATION

If you write maker identify as IEN - 5977

Kill the ROOTS and you kill the WEEDS!

NEW DOLGE N P WEED-KILLER

—Can be used with confidence by anyone. Kills *all* vegetation—RESULTS APPARENT IN A FEW DAYS. Spray, sprinkle or use as *dry powder*—"built-in" wetting and spreading agent works *fast* by wetting waxy surfaces of plants and inducing penetration into leaves, stems, roots. Non-inflammable, non-volatile, non-corrosive.

DOLGE SS WEED-KILLER

—WHERE NO VEGETATION IS DESIRED. Tends to sterilize the soil so that wind-blown seeds cannot germinate.

DOLGE E.W.T. 40-2, 4-D SELECTIVE WEED-KILLER

—*Will not harm good lawn grasses*, but kills dandelions, plaintain and other broad-leaved noxious plants in turf.

Write for Dolge booklet on chemical weed control, and see your DOLGE SERVICE MAN.

Ask about **SOLEXTO**
Kills grubs of turf insects —one application protects lawns for years!

equipment for **DOLGE**
WESTPORT, CONNECTICUT

If you write maker identify as IEN - 5978

For HIGHEST ELECTRICAL & MECHANICAL *Efficiency!*

New

JONES 2400 SERIES PLUGS & SOCKETS

Improved Socket Contacts Four individual flexing surfaces. Positive contact over practically their entire length.

Both Plug and Socket Contacts mounted in recessed pockets greatly increasing leakage distance, INCREASING VOLTAGE RATING.

Plug and Socket contacts cadmium plated. Add to appearance of your equipment. Interchangeable with Jones 400 Series.

Ask for Catalog 20, Complete line Jones Plugs, Sockets, Terminal Strips

P-2406-CCT
Plug—with cable clamp in top

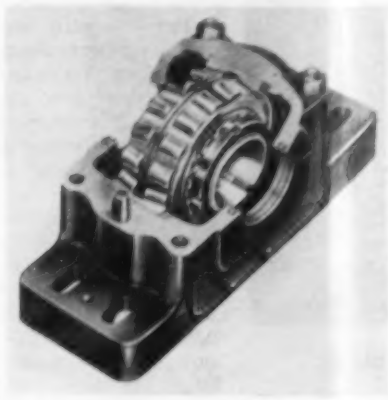
S-2406-SB
Socket with shallow bracket for flush mounting

Jones
HOWARD B. JONES DIVISION
CINCH MANUFACTURING CORPORATION
CHICAGO 24, ILLINOIS
SUBSIDIARY OF UNITED CARR FASTENER CORP

If you write maker identify as IEN - 5979

BEARING . . Steel pillow block, self-aligning rollers for heavy duty

Source: LINK-BELT COMPANY
307 N. Michigan Ave., Dept. IEN, Chicago 1, Ill.



Ask for Book 2565

Shaft diameters range from $2\frac{7}{16}$ to $6\frac{13}{16}$ in. in this new Series LPK6800F mill bearing pillow block. The bearing is assembled in a steel housing fitted with flat spiral steel seals to keep out dirt and retain either oil or grease. Jack screw holes are provided in the cap to assist in cap removal. An end plate can be employed on one side when a shaft terminates in the bearing.

Fixed and floating assemblies are available in which lateral movement of the outer bearing race is eliminated or permitted. Radial load rating is 2,440 to 21,500 lb. based on operation at 500 rpm. over the size range.

If you write maker identify as IEN - 5980

RHEOSTAT . . Potentiometer type has precious metal resistance element

Source: FAIRCHILD CAMERA & INSTRUMENT CORP.
225 Park Ave., Dept. IEN, Hicksville, N. Y.

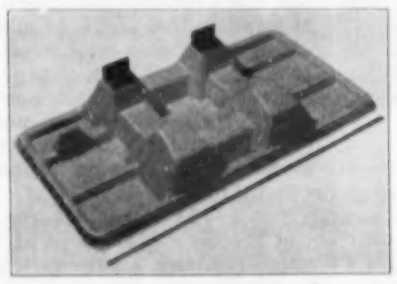
Please note our errors

We made two errors in our description of the company's new potentiometer type rheostat in IEN-3545-54. We should have stated that the unit has good service not surface life. We also should have said that it is electrically stable to 225 deg. Centigrade not Fahrenheit.

If you write maker identify as IEN - 5981

HANDLING . . Plastic pallet, to order for specified applications

Source: KLISE MFG. CO.
50 Cottage Grove St., Dept. IEN, Grand Rapids, Mich.



Weighs 7 lbs.

Royalite sheet is formed to required shapes in a new line of custom pallets which the company is prepared to supply. The unit shown carries a 350-lb. engine block casting on a roller conveyor through an assembly operation. It replaces wood pallets that gave difficulty because they absorbed oil, splintered and picked up metal filings and abrasive chips. The company is prepared to design and manufacture pallets for any specified use.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5982

DO YOU KNOW WHY

Grafo **COLLOIDAL GRAPHITE**

is becoming increasingly popular for hot forging operations? Because ***Grafo*** Colloidal Graphite dispersed in a water medium does not flake, burn up or leave gum deposits.

The dry colloidal lubricating films from ***Grafo*** Colloidal Graphite dispersions protect the dies far beyond the destruction point of most oils, while at the same time permit proper metal flow . . . reduce die wear . . . produce a better finish . . . give increased production.

Let ***Grafo*** Colloidal Graphite dispersions in water, oil or other liquid mediums cure your troubles too.

WRITE US REGARDING YOUR SPECIAL PROBLEMS

GRAFO COLLOIDS CORPORATION

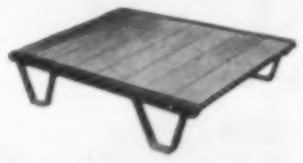
MANUFACTURERS OF *Grafo* COLLOIDAL PRODUCTS

SHARON, PENNSYLVANIA

If you write maker identify as IEN - 5983

In production or in storage

IRONBOUND EQUIPMENT HANDLES SMALL PARTS MORE EFFICIENTLY



Standard 2-way entry bolted type skid built to handle loads up to 5 tons.

Standard box top welded to standard skid. Available too, with removable boxes. Handles many items in production and storage.

Flexible arrangement of boxes and skids permits tiering and stacking to meet your individual requirements. Provides quick availability, easy handling, or storage for complete units or parts.

Each of the units illustrated has an important use in modern industry. Ironbound skid platforms and box tops are prime sources of increased plant capacity so vitally needed today. Our representative can help you to increase your output and plant space. Catalog GP-7 may help you, too!

Ironbound

IRONBOUND
BOX & LUMBER COMPANY
Materials Handling Division
50 HOFFMAN PLACE • HILLSIDE, N. J.

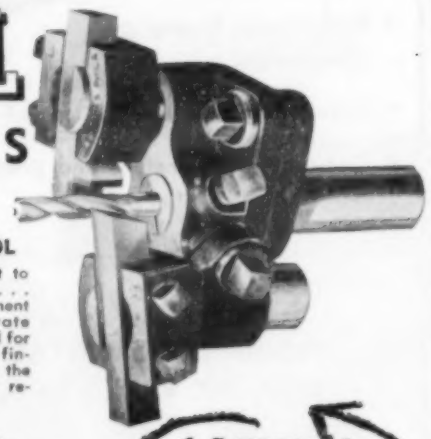
MANUFACTURERS OF QUALITY BUILT SKIDS, SEMI-LIVE SKIDS, FLOOR TRUCKS, ROLL TRUCKS, DOLLIES AND PRY BARS

If you write maker identify as IEN - 5984

MORE PRODUCTION . . . . . GREATER ACCURACY . . . . . LOWER COSTS!

With

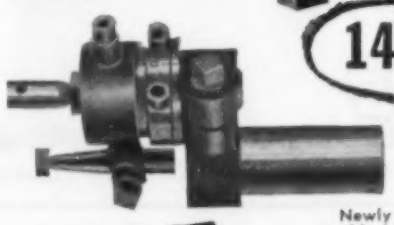
R AND L TOOLS



TURNING TOOL

Changes from right to left in ten seconds . . . Replaces an assortment of fourteen separate tools. It can be used for rough as well as finished cuts, meeting the most difficult job requirements.

14 TOOLS IN 1



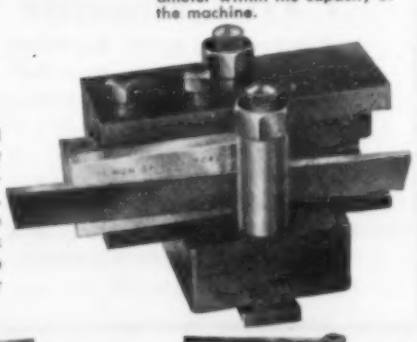
RECESSING TOOL

Newly designed . . . available in three standard sizes, (⅝", ¾", and 1" shank.) Adjustable to operate on both internal and outside diameters . . . with spindle running right or left. Each tool can be adjusted to handle any diameter within the capacity of the machine.

IT'S NEW!

UNIVERSAL TOOL POST

Precision manufactured to hold square or flat tools, which can be adjusted in all directions. Can be used close to chuck, on front or back cross-slide with spindle running forward or backward.



CUT OFF BLADE HOLDERS AND CUT OFF BLADES

Specially designed and flawlessly made to fit R and L UNIVERSAL TOOL POST. Holders can be set to cut off work as close to chuck as desired.

RIGHT R AND L LEFT TOOLS

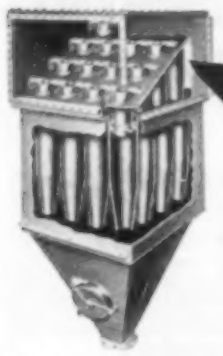
Write for Catalog

TURNING TOOL • TAP AND DIE HOLDER (Releasing or non-releasing—also furnished for Acorn Dies) • CARBIDE OR ROLLER BACKRESTS • UNIVERSAL TOOL POST • TURRET BACKREST HOLDER • CUT-OFF BLADE HOLDER • RECESSING TOOL • REVOLVING STOCK STOP • FLOATING DRILL HOLDER • KNURLING TOOL

1825 Bristol Street
Philadelphia 40, Pa.

If you write maker identify as IEN - 5986

There's a difference between COMPACTNESS and SPACE ADAPTABILITY...



The MULTICLONE has BOTH!

IN SELECTING dust recovery equipment, every foot of space saved is that much more valuable area available for other equipment. And the *compactness* of the equipment you select is just one of several ways to save plant space. Equally important is the *adaptability* of the equipment to space limitations within an existing plant.

And this is how the MULTICLONE *makes two-way savings in space:* The MULTICLONE itself is unusually compact, requiring as little as 1/6 the floor space, ¼ the cubic space of other units of comparable performance.

In addition, the shape of the MULTICLONE is readily adaptable to various space requirements and can be varied to fit odd-shaped or restricted areas that would otherwise be waste space.

For this reason you can fit the MULTICLONE into unbelievably small spaces, thus saving valuable plant area. But space-saving is just *one* of many MULTICLONE advantages. It is unusually efficient ... has no high-speed moving parts to maintain, no screens to clean or replace ... is simple to install, easy to service ... and has many other important advantages.

Get the full story by sending for this MULTICLONE booklet!

WESTERN Precipitation CORPORATION

DESIGNERS AND MANUFACTURERS OF EQUIPMENT FOR COLLECTION OF SUSPENDED MATERIALS FROM GASES & LIQUIDS

Main Offices: 1011 WEST NINTH STREET, LOS ANGELES 15, CALIFORNIA
CHRYSLER BLDG., NEW YORK 17 • 1 N. La SALLE ST. BLDG., CHICAGO 2
1429 PEACHTREE ST. N.E., ATLANTA 5 • HOBART BLDG., SAN FRANCISCO 4
PRECIPITATION CO. OF CANADA, LTD., DOMINION SQ. BLDG., MONTREAL

If you write maker identify as IEN - 5987

LOCKS SCAFFOLD BRACES

New gravity-action lock instantly secures cross-braces to "Trouble Saver" Sectional Steel Scaffolding frames, cuts erection and dismantling time and increases safety. Slide lifts up and swings outward, brace is slipped over the frame stud, then slide drops forward into locked position. Simplified design resists mortar, paint, rust and dirt damage. Easily operated in cold weather, the "SlideLok" secures one or two braces equally well. Use handy inquiry slip or write **The Patent Scaffolding Co., Inc.,** Dept. IEN-A, 38-21 12th St., Long Island City 1, N. Y.

OPENS LIKE A BOOK

New folding aluminum scaffold has sections designed for complete assembly by one man in less than a minute. End frames swing open sideways, making an easily managed swing of about 90°, permitting erector to stand within base area. Basic unit is 4'6" x 6" and is 7' high, including rubber-tired casters. Other sections are 6' high. Half-section and folding guard rail are 42" high. The "Fold-A-Way" Aluminum Scaffold is made of 2" O. D. tubing. Use handy inquiry slip or write **The Patent Scaffolding Co., Inc.,** Dept. IEN-B, 38-21 12th St., Long Island City 1, N. Y.

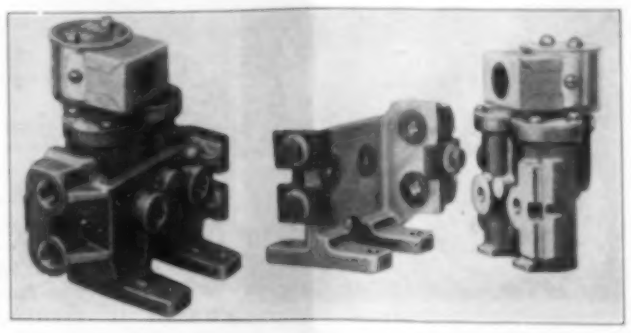
SAFETY ALUMINUM LADDERS

A line of safety aluminum step ladders 4', 5', 6', 7' and 8' heights, offers great strength, extremely high corrosion resistance and immunity to rust, rot and mildew. Weighing only 2¾ lbs. per foot, Safety Aluminum Step Ladders have heavy-duty steps double riveted to extra rigid channeled side rails. Safety type spreaders never pinch fingers. The pail rest is self-closing and legs are equipped with non-slip rubber boots. The line includes Safety Aluminum Extension Ladders in 16', 20', 24', 28' and 32' heights. Use handy inquiry slip or write **The Patent Scaffolding Co., Inc.,** Dept. IEN-C, 38-21 12th St., Long Island City 1, N. Y.

If you write maker identify as IEN - 5989

VALVE . . Solenoid operated 4-way, pneumatic or hydraulic, to 150 pounds

Source: BARKSDALE VALVES
5125 Alcoa Ave., Dept. IEN, Los Angeles 58, Calif.



Bulletins 1046 and 1047

New sub-base, shown in the center of the illustration, has been developed for use with the company's Series 1046 Crescent solenoid operated valves. The valve mounts in the sub-base by means of three clamp bolts so it can be removed quickly and replaced with a new one to minimize time out for maintenance. The base is available for any of the four valve sizes with connections ranging from ¼ to ¾ inch. Application is on control of air, water and light oils at pressures to 150 pounds.

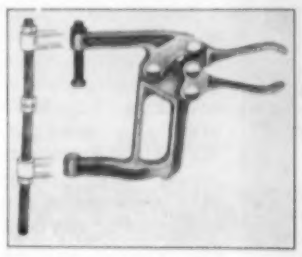
Construction of the valve itself, previously described IEN-9586-50, includes two main vertical valve members held in normal "up" position by a combination of light spring and fluid pressure. One is open to exhaust and closed to pressure. The other is open to pressure and closed to exhaust. The two pressure openings are side by side at the front, as shown in the assembly to the left in the illustration. These openings can connect, for example, to the two ends of a double acting cylinder. Inlet and exhaust are bottom and top on the left hand side as the valve is shown.

Built into the body, and connected to the solenoid at the top, is a three-way pilot valve with pressure and exhaust connecting alternately to cylinders at the tops of the two valve chambers. Energizing the solenoid applies this pressure to move the valve plungers down and reverse the main operating and exhaust connections. De-energizing the solenoid permits the plungers to return to normal "up" position.

If you write maker identify as IEN - 5990

CLAMP . . Toggle design in plier and C-clamp construction

Source: LAPEER MFG. COMPANY
1144 W. Baltimore, Dept. IEN, Detroit 2, Mich.



Knu-Vise design

Two spindles, one opposing the other, and each independently retractable, feature the construction of this new double spindle clamp. It is known as Model P-1200-2S Series in the plier design and Model C-1200-2S Series in the C-clamp design. Both provide 1,200-lb. clamping effort.

Throat depth is 2¼ in. and throat gap ranges 1⅛ to 5⅞ in. maximum in four available sizes. A larger double-spindle plier design provides a clamping force of 1,800 pounds.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5991

Flowstrut—Constructed a Frame for an Infra-Red Tunnel

Table or trestle . . .
workbench or warehouse . . .

BOLT it together swiftly, simply, economically!

FLOWSTRUT

WORLD PATENTS PENDING

UNIVERSAL SLOTTED ANGLE SYSTEM

STANDARD EQUIPMENT FOR YOUR INDIVIDUAL BUILDING NEEDS

BUILD DIRECTLY FROM YOUR ROUGH SKETCH — WITH ONLY A WRENCH AND A CUTTER! 40 pre-drilled bolt holes per foot; cutting marks at ¾" intervals eliminate detailed drawings and tedious measurements. Flowstrut needs no finishing; Bonderized baked gray enamel finish is weather- and rust-proof.
Strong and sturdy Flowstrut-built units are completely salvageable! Expand or dismantle as requirements vary; Flowstrut stores compactly.

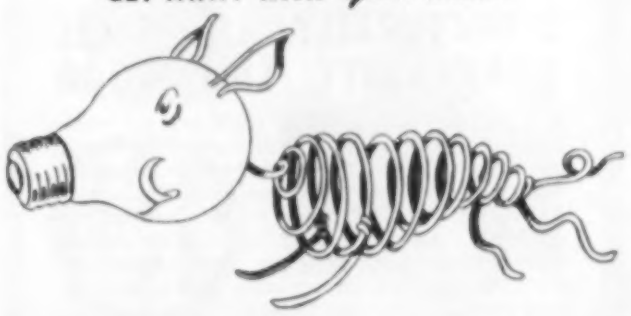
WRITE FOR DETAILED BULLETIN TODAY

Distributors' Inquiries Invited

FLOWSTRUT CORPORATION
21-27 Leonard Street, New York 13, N. Y.

If you write maker identify as IEN - 5992

DON'T LET THIS CUR-RENTELOPE GET AWAY WITH *Your* MONEY



The Cur-rentelope elopes with excess current if you don't watch out. The Cur has his lair in plants and offices that haven't followed the suggestions in the *Champion Maintenance Manual** —and that aren't equipped with the right lamps—efficient, long-lasting Champion Incandescent Bulbs and Fluorescent Tubes.

**May we mail you a free copy?*

CHAMPION LAMP WORKS
600 Broad Street • Lynn, Massachusetts

CHAMPION lamps

If you write maker identify as IEN - 5993

U.S. Royal Cords and Cables

Safety Tested!

Flexibility · Dielectric strength
Smooth finish · Physical toughness

UNITED STATES RUBBER COMPANY
Electrical Wire and Cable Department
Rockefeller Center, New York 20, N. Y.

If you write maker identify as IEN - 5994

IT TAKES TWO TO MAKE A BARGAIN

But Only ONE MACHINE To Make Two Bends

Now you can make two bends at the same time in a piece already bent on different planes. The dies are adjustable to any centers within the height of the central die spindle. This feature also insures that both the top and bottom bends will be identical. The PEDRICK Benders are equipped with automatic relay controls for automatic duplicate production bending. Ideal for chair frames, cart handles, and a myriad of other applications.

Write for descriptive folder.
Prices as low as $1575.00

PEDRICK TOOL & MACHINE CO.
3640 North Lawrence St., Dept. 7, Phila. 40, Pa.

If you write maker identify as IEN - 5995

MET-L-WOOD

METAL BONDED TO PLYWOOD

STRUCTURALLY: Like STEEL
WORKABILITY: Like WOOD

● A Met-L-Wood panel ⅜" thick has the same stiffness as a ¼" steel plate—yet weighs only one-third as much! Add to these facts: excellent workability without special tools, inherent sound-deadening, insulating and vibration-damping qualities . . . and smooth, clean surfaces that withstand hard wear, water, and weathering. Isn't there a place for versatile Met-L-Wood in your product planning? Details are yours for the asking in the bulletin described below.

THE ANSWER BOOK ON MET-L-WOOD FOR YOUR USES

Met-L-Wood Bulletin 521 contains 16 pages of technical data, facts and photos to give you a clear, accurate picture of Met-L-Wood characteristics, uses and possibilities. Write for your copy today.

MET-L-WOOD CORPORATION
6755 West 65th Street, Chicago 38, Illinois

If you write maker identify as IEN - 5996

HERE'S WHAT YOU WANT TO KNOW about the most sensitive and accurate thermostatic control

Catalog 400 is a reservoir of late and authoritative information about modern thermostatic control. It gives full data on the Fenwal THERMOSWITCH® unit, the control with the single-metal shell which expands or contracts with temperature variation. This shell itself activates the electrical contacts — its response is instantaneous. The Fenwal THERMOSWITCH control is widely used in the newest type aircraft where control must be quick, positive and accurate. It is also widely used throughout industry for temperature regulation in machinery and processing equipment and to control variables of many kinds where temperature is a factor. It is so economical it can be used anywhere.

You should know more about this most modern of thermostatic controls. Our engineers are glad to work with yours on special projects. No charge for Catalog 400. Write **Fenwal Incorporated, 75 Pleasant St., Ashland, Mass.**

Fenwal **THERMOSWITCH®**
Electric Temperature Control and Detection Devices
SENSITIVE...*but only to heat*

If you write maker identify as IEN - 5997

High Speed "Controlled Tapping"

SAVES TAPS . . . STOPS SPOILAGE

"Controlled Tapping" is the nearest to automatic tapping perfection yet developed! AND users of Procunier tapping heads have been enjoying this advantage for many years. It is made possible by a unique exclusive clutch design which operates with a smooth sensitive "cushioned action." The tap driving power is automatically regulated by the pressure applied thru the drill press spindle. Large or dull taps require more pressure and driving power than smaller, sharper ones—and a "green" as well as experienced operators can quickly detect dull or loaded taps by the "feel" or pressure applied. The acute sensitivity of the clutch results in less tap breakage, fewer spoiled pieces and makes it easier to maintain high production schedules and output. This is only one of the many exclusive features and advantages that have made Procunier Tapping heads the favorites in the industry. Learn how you, too, can produce more, for less—faster and longer with Procunier.

New TRU-GRIP Tap Holder is lighter, smaller in diameter. It affords easier tapping close to walls or shoulders.

Write for FREE Brochure
Giving full particulars on the New Tap King and the complete line of Tapping Machines.

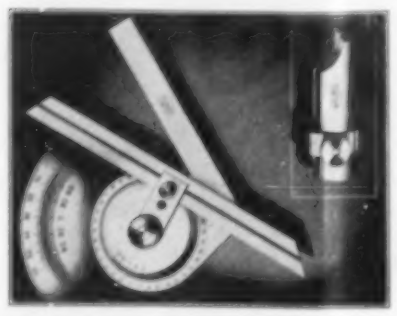
PROCUNIER
Safety Chuck Company
18-16 S. Clinton St. Chicago 6, Ill.

Procunier SAFETY CHUCK CO.
18-16 S. Clinton St.,
Chicago 6, Ill. Dept. 5
Gentlemen: Please send your illustrated brochure giving complete details specifications and prices.
Name .....
Address .....
City ..... Zone ..... State .....

If you write maker identify as IEN - 5998

GAGE . . Vernier bevel protractor in dull chromium finish to stop glare

Source: GEORGE SCHERR COMPANY
200 Lafayette St., Dept. IEN, New York 12, N. Y.



Bulletin, "Mahr Universal"

Any angle can be measured, to 5 min. of arc, with this new Mahr universal protractor. Its measuring surface is graduated in a complete circle. Its blade measures 6 in. in length in standard construction. Blade thickness is 0.1 inch. The dial clamps in position, after setting, by turning a thumb nut. The movable blade is clamped independently of the dial by a small locknut. List price, in a wood case with a 6-in. blade, is $25. An extra 12-in. blade adds $5. A stand adds $17.

If you write maker identify as IEN - 5999

HOSE . . For fire extinguishing employs synthetic reinforcing cord

Source: HAMILTON RUBBER MFG. CO.
Box 361, Dept. IEN, Trenton 3, N. J.

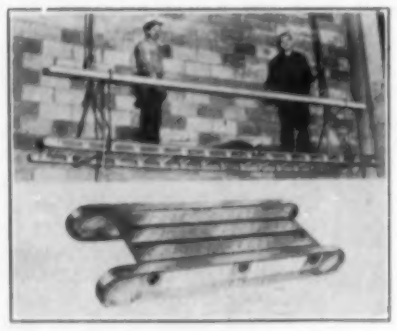
New hose to left

Dacro-Flex trade names a new fire hose available in 1½ and 2½-in. sizes in double-jacket construction for test pressure to 400 pounds. The new hose employs synthetic fiber as the filler cord to result in a light flexible construction with less bulk than the hose for similar service previously manufactured by the company.

If you write maker identify as IEN - 6000

SCAFFOLD . . Aluminum stage for construction and maintenance

Source: R. D. WERNER COMPANY
295 Fifth Ave., Dept. IEN, New York 16, N. Y.



Carried in stock

Lengths range from 8 to 30 ft. for this new aluminum stage. Four standard widths are 12 to 28 in. to fit standard stirrups. Extruded aluminum strips with raised skid proof points are employed on the deck for sure footing whether the stage is wet or dry. The 30-ft. unit will carry a 500-lb. weight concentrated at the center with negligible deflection.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6001

SOLVE UP TO 9 FLOOR PROBLEMS

★ *Economically!*
★ *Easily!*
★ *Speedily!*

SCRUBBING
WAXING
POLISHING
SHAMPOOING
DRY CLEANING
GRINDING
SANDING
BUFFING
TROWELING

MULTI-CLEAN 9-Job Floor Scrubbing Machine

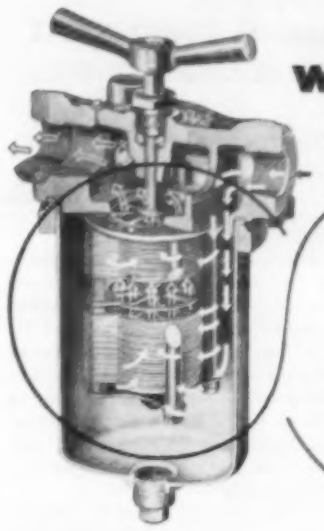
ENTHUSIASTIC USERS throughout the nation's institutions and businesses praise the Multi-Clean 9-Job Floor Scrubbing Machine. Because it's *money saving* . . . handles so many jobs for the cost of one machine. Because it's *labor saving* . . . ease of handling makes it a favorite with floor maintenance men everywhere. Because it's *time saving* . . . top efficiency cuts working time by hours. Available in five heavy-duty sizes to solve your particular floor problems.

Solution flow and motor controls at your fingertips. Easy-fill tank won't spill when tilted. Write for more information on the many outstanding long-life features found only under the Multi-Clean label.

MULTI-CLEAN®
2277 Ford Parkway — Dept 1E-5 St. Paul 1, Minn.

If you write maker identify as IEN - 6002

WHAT FLUID STRAINER



is non-stopping (A) and is permanent (B) and handles full flow (C) and guarantees performance (D)?

A. Cuno AUTO-KLEAN is continuously-cleanable, manually or automatically, without stopping flow

B. Cuno AUTO-KLEAN is all-metal, disc-type, non-collapsible

C. Cuno AUTO-KLEAN can handle full flow—a few to more than 4000 gpm—in same space as usual partial-flow type

D. Cuno AUTO-KLEAN will remove all particles larger than specified—from .0035 in. to .062 in.

CUNO
Fluid Conditioning
Removes More Sizes of Solids from More Types of Fluids

Widely used on lubricating, hydraulic and fuel oils, water, and all industrial fluids.

For free booklet on fluid straining, address Cuno Engineering Corp., 695 South Vine Street, Meriden, Connecticut.

If you write maker identify as IEN - 6003

It's the inside that Counts!

New 40′ Clear Span Rigid Frame Building

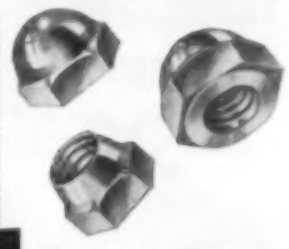
It's headroom and inside space that counts. Get the facts about this new USF prefabricated steel building offering trussless, clear span rigid frame construction, and full 40′ width in any length in multiples of 20′. Truck or regular access doors available at both ends and sides and projected sash may be placed on two levels, sides or ends. Plastic-fibreglas roofing sheet inserts available for extra daylight. It's the fastest erecting big building made.

Write Today! Get the complete story on USF 26′, 30′, and 40′ steel buildings.

UNITED STEEL FABRICATORS, INC.
Building Sales Dept.
WOOSTER, OHIO
MANUFACTURERS OF Hollow Metal Doors and Frames • Prefabricated Metal Buildings • Corrugated Metal Window Wells • Highway Guard Rail • Structural Bridge Flooring • Corrugated Metal Pipe

If you write maker identify as **IEN - 6005**

NO tool marks! NO cut-off burrs!



YES they're GRC die cast CAP NUTS

. . . AND THEY NEED NO PROTECTIVE FINISHES IN MOST APPLICATIONS! Like all GRC die cast fastenings, they're non-ferrous, rustproof, and corrosion-resistant. GRC zinc alloy fastenings are furnished with clean threads and a bright finish that withstands normal usage—are available in all commercial finishes when desired. Gries gives you prompt delivery of all standard thread sizes—specials to order.

- **Durable** • **Dependable**
- **Uniform** • **Economical**

Write today for samples, low prices and bulletins

OTHER GRC ZINC ALLOY FASTENINGS

GRC WING NUTS
Exclusive Finger-Grip Design!

NEW! GRC LOW WING NUTS and GRC HIGH WING NUTS
—for special applications!

GRC ASSEMBLED WING SCREWS
Steel screws plus GRC's Finger-Grip Wing Nut!

GRC SMALL TUBULAR RIVETS
Diameters up to 9/64", lengths to 5/16"

GRIES REPRODUCER CORP.
World's Foremost Producer of Small Die Castings
139 BEECHWOOD AVE., NEW ROCHELLE, N. Y.
Phone NEw Rochelle 3-8600

If you write maker identify as **IEN - 6006**

then you haven't seen the Tenney SERVO UNIT and COMPANION TEST CHAMBER

Accurate environmental testing, for a wide variety of controlled atmospheric tests, is within the reach of *all* industrial budgets. The cost is well under $2,000 for the majority of industrial needs.

The Tenney Servo Unit, a portable air-conditioning system, provides broad variations of heat, cold, and/or humidity for aging and weathering test programs. Air is circulated at the rate of 40 cu. ft. per min., capable of absorbing 1700 B. T. U. per hour at − 100°F., or of delivering 5000 B. T. U. heating effect at a maximum temperature of + 180°F. Relative humidity can be maintained from ambient to 95% in a temperature range of ambient to + 180°F. in 40 cu. ft. of recirculated air. Low temperature operation requires 10 lb. of dry ice per hour at − 180°F., ¾ lb. per hour static.

SPECIFICATIONS

Model	Size	Wgt.	Dry Ice Capacity	Total Temp. Range	Electric Req'mts.
TSU-50	17"x17"x31"	165 lb.	50-70 lb.	−100°F. to + 200°F.	2 kw.
TSU-150	21"x25"x33"	200 lb.	150 lb.	−100°F. to + 200°F.	2 kw.

The Tenney Companion Test Chamber provides an efficient test work-space when attached to the Tenney Servo Unit either horizontally or vertically, by a simple, sturdy device. (Servo is easily detached for use with other enclosures or tests.) Ruggedly constructed and fully insulated, this chamber is built in three sizes of work space, stainless-steel lined: 3 cu. ft. (18" x 18" x 18"), 8 cu. ft. (24" x 24" x 24"), and 27 cu. ft. (36" x 36" x 36"). Forged brass hardware is provided. Complete vapor-proofing is achieved by special gaskets. Optional equipment includes multi-paned viewing window in door, electrical connector panel, turning shafts, coaxial cable, utility ports, and high-voltage terminals.

For further information and prices write:

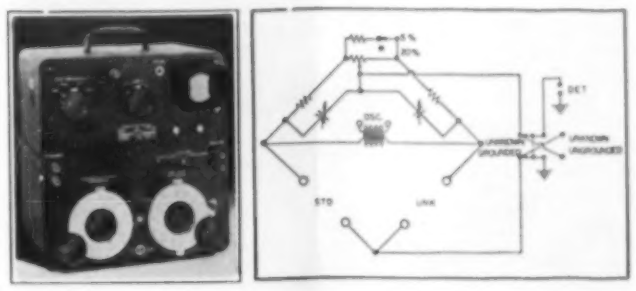
Tenney ENGINEERING, INC.
Dept. C, 1090 Springfield Road, Union, N. J.
Plants: Union, N. J. and Baltimore, Md.

8584 Engineers and Manufacturers of Refrigeration and Environmental Equipment

If you write maker identify as **IEN - 6008**

TESTING . . Comparison bridge for direct measurement or fast sorting

Source: GENERAL RADIO CO.
275 Mass. Ave., Dept. IEN, Cambridge 39, Mass.



Fast and accurate

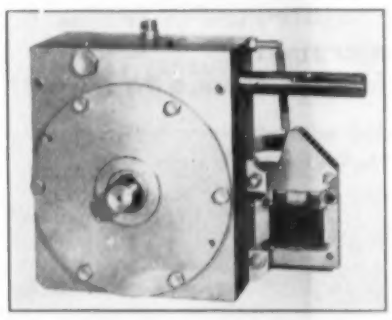
Type 1604-B is a new comparison bridge that can apply 400, 1,000 and 5,000-cycle test frequencies to check electronic components having impedances between 2 ohms and 20 megohms with a basic accuracy within 0.1 per cent. It can be employed to check transformer turn ratio or balance in center tap windings, to measure capacitors, and to measure the changes in impedance of solutions for control of certain chemical processes. It applies in direct measurement or as a control for automatic sorting. It operates on 110-volt ac., measures 12 by 10 by 14¼ in. and lists at $390.

An unknown is compared against a standard in direct measurement in which case the bridge dials are rotated until the cathode ray tube on the housing face indicates a null position. The difference between the standard and the unknown is then indicated by the dial settings. The cathode ray tube is calibrated at the desired sorting tolerance for high speed sorting and is used to provide a continuous "go, no-go" indication. The "error" signal at the cathode ray indicator can be employed to operate automatic equipment.

If you write maker identify as **IEN - 6009**

DRIVE . . Solenoid operated clutch engages worm and gear transmission

Source: ANDERSON BROS. MFG. COMPANY
1907 Kishwaukee St., Dept. IEN, Rockford, Ill.



Instantaneous action

Rating for this new assembly, with its clutch, operating solenoid and gear transmission, is 300 in. lb. at 60 rpm. in a Model 300. It is 550 in. lb. at 45 rpm. in a Model 301. The solenoid is actuated by closing or opening a switch to provide continuous operation or fractions of a single revolution from a ¼ turn minimum and up in increases of $\frac{1}{24}$ revolution or multiples of that increment. The worm gear transmission is available in 20 to 1 or 40 to 1 reduction.

The assembly can be specified with single or double output shaft extension, right-hand or left-hand input and ratings from fractional to 1 hp. Overall dimensions are about 10¼ by 5½ by 7⅞ inches. The input shaft extension measures about 3½ in. in length. The output extension is about 1 inch.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 6010**

ATLAS REGULATING DEVICES

TRADE MARK REG.

Tell us about your tough regulating problems. ATLAS has been in the regulating business *exclusively* for more than a half century.

Where problems are special ATLAS engineers are always eager to help. Our designers and engineers have come up with the right answer many times in the past, often where others have failed. We have produced special regulators for refineries, utilities, equipment manufacturers, pipe lines, processing industries, marines installations, govt. agencies, etc.

At the left we show a typical ATLAS Temperature Regulator—applicable to many services. For complete information check the square "Temperature Regulators" below. Check other items also, on which you want data. Clip out, and mail to us with your name, firm name, and address.

ATLAS VALVE COMPANY
REGULATING VALVES FOR EVERY SERVICE
263 South St. Newark 5, N. J.

Represented in Principal Cities

- ☐ Back Pressure Valves
- ☐ Balanced Valves
- ☐ Boiler Feed Regulators
- ☐ Control Valves
- ☐ Damper Regulators
- ☐ Exhaust Control System
- ☐ Float Valves
- ☐ Oil Control Cocks
- ☐ Temperature Regulators
- ☐ Pressure Regulators
- ☐ Pump Governors
- ☐ Reducing Valves

If you write maker identify as **IEN - 6011**

At left: Jacketed 3-Way Plug Cock.

Below: Cutaway section of Jacketed Cock, showing packing gland construction.

H&B ESTABLISHED 1887

Jacketed Pipe, Pumps, Valves and Fittings . . .

Regardless of whether the material is being heated or cooled in the processing, and what heating or cooling medium is being used, H & B jacketed fittings are available for all applications. Steam, hot water or hot oil may be used for heating, cold water or brine for cooling.

H & B can save you money on your jacketed pipe and fitting requirements because we buy all standard size pipe from the mill in carload lots, make our own special flanges in quantities, and are tooled up for making jacketed equipment at lowest possible price. Write for Bulletin J-50.

Hetherington & Berner Inc.
725 Kentucky Avenue • Indianapolis 7, Indiana

If you write maker identify as **IEN - 6012**

D.O.James

Established 1888

MOTORIZED GEAR SPEED REDUCERS

A CENTRALLY BALANCED DRIVE WITH GREAT EMERGENCY STRENGTH

Simplified assembly using standard flange motors, coupling connected with high speed pinion gear shaft, making for greater accessibility.

SINCE 1906 . . . When the first D.O.James Motorized Gear Speed Reducer was built . . . We have improved the design and manufacture of Motorized Gear Reducers, maintaining in them the same high quality of manufacture as our other standard Gear Speed Reducers.

The many advantages of D.O.James Motorized Gear Speed Reducers and their continued proven performance for many years make them a leading choice with power transmission designers and engineers.

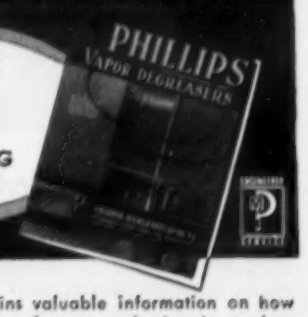
D.O.JAMES GEAR MANUFACTURING CO.
MAKERS OF ALL TYPES OF GEARS AND GEAR SPEED REDUCERS
1140 WEST MONROE STREET, CHICAGO, U. S. A.

If you write maker identify as **IEN - 6013**

PHILLIPS

LEARN HOW VAPOR DEGREASING CAN CUT COSTS AND INCREASE YOUR PRODUCTION

SEND FOR YOUR FREE COPY OF PHILLIPS' NEW DEGREASING BULLETIN



HERE's a new bulletin that contains valuable information on how modern vapor degreasing speeds up production in modern factories by making metal cleaning operations faster and more economical. Listed below are some of the features of this new book:

WHAT DEGREASING IS — A full description of what vapor degreasing is and what it will accomplish for you.

HOW DEGREASERS WORK — A series of photographs and written description shows what happens in the degreasing process.

DEGREASER APPLICATIONS — Illustrates number of different applications of degreasers to solve metal cleaning problems in various industries.

COMPLETE LINE OF STANDARD DEGREASERS — Describes Phillips' full line of standard equipment, including batch type, combination, rotomatic, and conveyorized models.

SPECIALLY ENGINEERED UNITS — Tells about Phillips' service in designing special degreasing units for solving unique metal cleaning problems.

Phillips 3461 Touhy Avenue • Chicago 45, Illinois
MANUFACTURING COMPANY
Engineered Metal Cleaning Equipment

If you write maker identify as IEN - 6014

DAY DUST CONTROL

SINCE 1881

A SINGLE UNIT OR A COMPLETE SYSTEM

DAY "AC" FILTER HAS 99.99+% FILTERING EFFICIENCY

The new efficiency achieved with the **DAY** "AC" Dust Filter provides benefits not possible with conventional filters. Its 99.99+% filtering efficiency applied to your plant will give you better dust control, larger recovery of valuable product, minimized plant hazards and more economy in space, installation and maintenance costs.

72 YEARS' EXPERIENCE IN INDUSTRIAL DUST CONTROL

Since 1881, The **DAY** Company has specialized in the engineering, manufacture and installation of dust control systems for industry. If you have a dust problem, **DAY** can provide an effective and economical solution.

WRITE FOR NEW BULLETIN

It will give you detailed facts and figures on the **DAY** "AC" Dust Filter and other **DAY** equipment.

The DAY Company

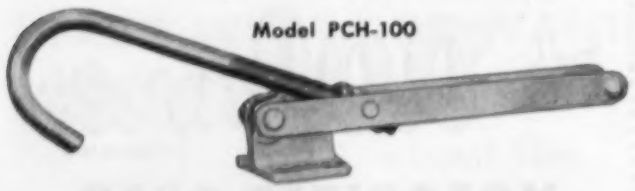
813-3rd Avenue N.E. • Minneapolis 13, Minnesota

IN CANADA: P.O. Box 70T, Ft. William, Ont.

Branch Plants in Buffalo, Ft. Worth and Welland, Ont.

If you write maker identify as IEN - 6015

Model PCH-100



THIS NEW CLAMP

will simplify and speed your operations requiring pulling action.

This new clamp—a hook clamp—may have the answers to many of your problems—specifically where tension and sustained holding power is needed.

Save physical strength and time—simplify pulling jobs. Originally developed for aircraft industry, this unusual clamp can bring help to many other industries. Maybe yours!

Don't exert human strength; do the job mechanically. You can build up a great pulling force through the toggle action of this Knu-Vise clamp—quickly and easily.

We'll tell you more without obligation. Send for complete information.

Sales offices in principal cities—Teletype DE 49

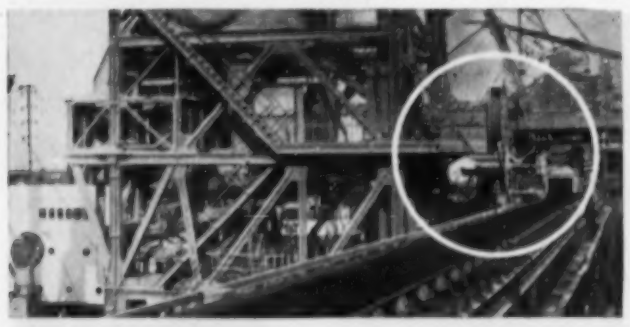
KNU-VISE PRODUCTS **LAPEER MFG. CO.**

3060 DAVISON ROAD • LAPEER, MICHIGAN

WESTERN DIVISION: 422 MAGNOLIA, GLENDALE, CALIF.

CANADIAN DIVISION: HIGGINSON ENGINEERING, HAMILTON, ONT.

If you write maker identify as IEN - 6016



Alabama State Docks Plant specifies HAZACORD

Alabama State Docks Bulk Material Handling Plant utilizes Hazacord Portable Cables in a unique, constant torque take-up reel feeder for the traveling overhead loading structures. Previous construction involved contactors riding on open bus bars which were easily damaged and dangerous to personnel. Since Hazacord has been installed, full safety has been assured and outages due to contactor or bus damage have been eliminated.

650 feet of 5000-volt Hazacord Type SH-D on each reel supplies power to the loading structures. Trouble-free operation on such unusual installations indicates the toughness and dependability of Hazacord Portable Cables. Hazacords are the choice for all portable power circuits up to 15,000 volts.

Write for information on the correct Hazard cable for your requirements to Hazard Insulated Wire Works, Division of The Okonite Company, Wilkes-Barre, Pa.

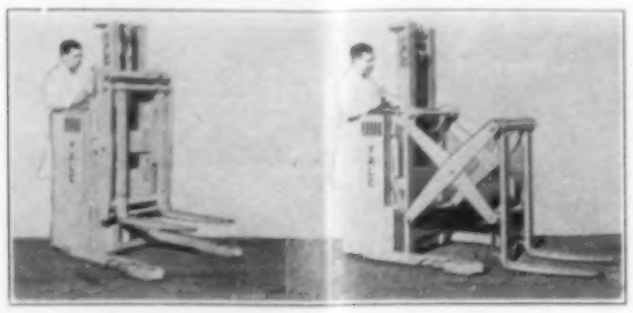
HAZARD *insulated cables*

2387

If you write maker identify as IEN - 6017

TRUCK . . Power lift fork design also advances and retracts the forks

Source: YALE & TOWNE MFG. CO.
11000 Roosevelt Blvd., Dept. IEN, Philadelphia 15, Pa.



Reaches forward with truck stationary

Extend-A-Load is a new design, rating 1 ton load capacity at 24 in. load center, in the company's Warehouser line. Its forks are mounted on a pivoted pantograph assembly that rides up and down on the lift carriage for vertical fork elevation to 126 inches. Operating a push button control, with the forks at any elevation, extends them and the load they are carrying horizontally to a maximum of 30 inches. The arrangement permits carrying a load to face a storage space, then lifting it and moving it forward for deposit without having to move the truck further. Similarly a load can be extracted from a pile and carried to a new location.

The truck measures about 75 in. in overall length from the tip of the 36-in. forks to the rear. Width is 48 inches. Height from the floor to the top of the mast is 83 inches. The truck is designed for an 11.3 per cent grade clearance. It will make a right angle turn in 64-in. intersecting aisles carrying a 48 by 42 in. load. It can stack at right angles in an 87-in. aisle.

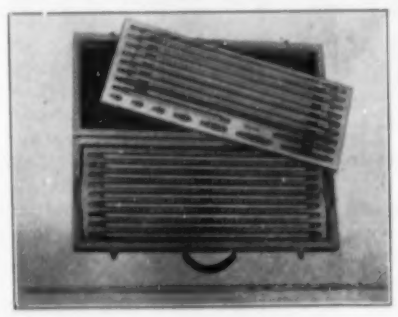
There are three speeds forward and three in reverse with time delay controls between the various steps for smooth acceleration. Travel speed is 4.3 mph. without a load and 3.4 mph. with a rated load. Lift speed free is 35 fpm. It is 25 fpm. with a rated load. Lowering speed is controlled hydraulically.

The forks can be tilted back to a 2¼-deg. angle in retracted position. There is gradual decrease to zero tilt in a distance of 13 inches. Further extension is in straight line action parallel to the floor. This sequence is reversed to retract.

If you write maker identify as IEN - 6018

GAGE . . Inside micrometer assembles in lengths from 6 to 30 feet

Source: BROWN & SHARPE MFG. CO.
235 Promenade St., Dept. IEN, Providence 1, R. I.



To special order

A special head and 25 extensions are employed in combination in this new inside micrometer to measure any dimension between a minimum of 6 and a maximum of 30 feet. Each extension is calibrated to the nearest 0.0001 inch. The component parts are packaged in a case.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6019

LINERS

. . . with "universal" chemical resistance—excellent durability. Even extreme corrosives — hydrofluoric, fuming nitric and sulfuric acids, hydrogen peroxide—can't affect non-porous film liners of "KEL-F" polymer. Excellent flexural and tensile properties prevent damage. Non-hesive surface cleans readily, can even be sterilized. Liners — for containers and equipment — are fabricated by electronic or mechanical sealing to any size.

KEL-F

For the names of manufacturers of these and other products of "KEL-F" Polymer write for descriptive "BUYERS' GUIDE" . . . Chemical Manufacturing Division—Dept. A-5 The M. W. Kellogg Company Danforth Avenue, Jersey City 3, N. J.

TRI-FLUORO-CHLORO-ETHYLENE POLYMERS

®"KEL-F" is the registered trademark of The M. W. Kellogg Company

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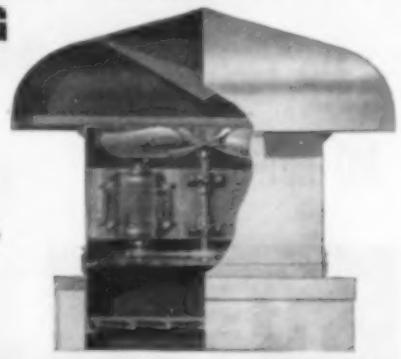
If you write maker identify as IEN - 6020

VENTILATING PROBLEM?



LET BURT ENGINEERS SOLVE IT FOR YOU!

Burt engineers are specialists in air movement. They should be—with over half a century of practical experience in designing, engineering and manufacturing ventilators for the alphabet—from atomic bomb plants to zoos . . . After the slide rule, Burt has the invaluable asset of thousands of successful ventilator case histories to check and prove or disprove the paper work.

BURT'S LINE IS COMPLETE

Burt manufactures all types, all sizes of ventilators. Burt is not interested in selling a specific type because Burt makes them all. That's why Burt's unbiased recommendation is real assurance of satisfaction. Write for our general catalog.

FAN & GRAVITY VENTILATORS • LOUVERS • SHEET METAL SPECIALTIES

The Burt Manufacturing Company

909 So. High St., Akron 11, Ohio

MEMBER POWER FAN MANUFACTURERS ASSOCIATION

If you write maker identify as IEN - 6021

tools that Streamline electrical maintenance

FOR ELECTRONIC TROUBLE SHOOTING

WESTON Model 785 Industrial Circuit Tester

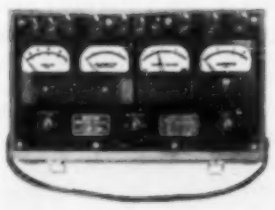
A multi-range, multi-purpose, ultra-sensitive analyzer, for laboratory and industrial checking of electrical and electronic circuits. Has 28 practical scale ranges; measures d-c and a-c voltage, d-c and a-c current, and resistance. Accessories available to extend ranges. Compact and portable; oak or steel case.

FOR MOTORIZED EQUIPMENT

WESTON Model 633 Clamp Volt-Ammeter

For convenient and rapid measurement of a-c voltage and current without breaking the circuit. Jaws take insulated or non-insulated conductors up to 2" diameter. Has 6 position thumb switch for range selection, and adjustable pointer stop for measuring motor starting current. Also available as a-c clamp ammeter, without voltage ranges.

FOR POWER PROBLEMS



WESTON MODEL 639 A-C Industrial Analyzer

A combination Voltmeter, Wattmeter, Power Factor Meter, Ammeter with all interconnections made. Only one hook-up required to measure a-c current, voltage and power in single and polyphase circuits, and power factor in 3 phase, 3 wire balanced circuits. Adequately insulated binding posts, high overload capacity.

AVAILABLE THROUGH LEADING DISTRIBUTORS

WESTON Instruments

WESTON Electrical Instrument Corporation
614 Frelinghuysen Avenue, Newark 5, New Jersey

If you write maker identify as IEN - 6023

ARMSTRONG
Drop Forged LATHE DOGS

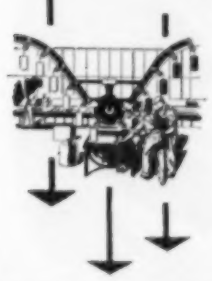
ARMSTRONG Lathe Dogs give extra service because they are drop forged from selected open hearth steel and are heat treated to extreme toughness and stiffness. Hubs are made large enough to permit re-tapping, screws are also of special analysis steel and are hardened at the point to prevent upsetting. ARMSTRONG Dogs come in 10 types with square head or safety headless screws, with straight or bent tails. They are carried in stock by your local ARMSTRONG Distributor.

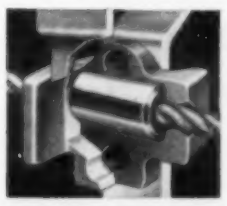
Write for catalog

ARMSTRONG BROS. TOOL CO.
5243 West Armstrong Avenue
Chicago 30, Illinois
New York and San Francisco

If you write maker identify as IEN - 6024

Meet the World's Newest CABLE CONVEYOR "BUSH-LOCK" by Buschman





Two halves of an adaptor block, to which are attached trolleys and hook, are bolted around cylindrical bushing immovably locked to cable on accurate centers by high pressure swaging.

Here is a conveyor—tried, proven, accepted—whose patented design gives 30 times greater cable life . . . enables the user to stock standard lengths of cable for fast, easy, on-the-spot installation, revision or maintenance . . . facilitates lubrication to protect against acid, moisture or other deteriorating factors . . . provides for an increased range of applications.

Constant true alignment of trolleys is assured and binding of cable at flexure points is eliminated by exclusive BUSH-LOCK design.

The new BUSH-LOCK Cable Conveyor is available in ¼" and ⅜" sizes for transporting parts through cleaning, drying, painting, and progressive assembly operations or for use as overhead storage banks.

Both ¼" and ⅜" BUSH-LOCK Cable Conveyors will operate on existing Buschman Snub-Lock systems.

C-137 EWB

Write today for literature.

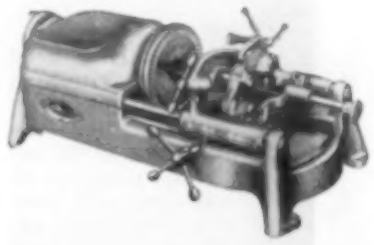
PRODUCE MORE . . . FOR LESS
Buschman Conveyors

THE E. W. BUSCHMAN COMPANY
4447 CLIFTON AVENUE • CINCINNATI 32, OHIO
REPRESENTATIVES IN PRINCIPAL CITIES

If you write maker identify as IEN - 6026

THREADING . . Portable power drive for hand tools, also to ream, cut pipe

Source: RIDGE TOOL CO.
Clark St., Dept. IEN, Elyria, Ohio



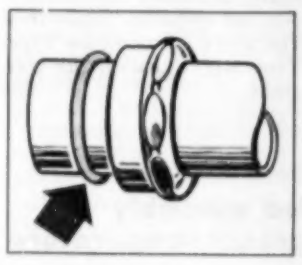
Speed-Grip Chuck

Type 400A is a new motor equipped power drive to operate hand tools for threading ⅛ to 2-in. pipe, ¼ to 2-in. bolts. The unit has capacity for geared tools to 12 inches. It is equipped with a new wrenchless chuck that is closed on the work by turning a hand wheel followed by light hammering. From this point the motor drive holds the work tightly without interfering with easy hand wheel release.

If you write maker identify as IEN - 6027

SEALING . . Flexible ring for 1¼ to 2 in. plumbing slip joint

Source: J. A. SEXAUER MFG. CO.
2503 Third Ave., Dept. IEN, New York 51, N. Y.



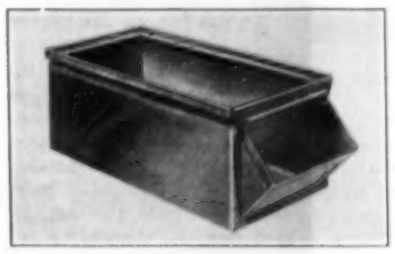
Made in one size

Fits-All is a new slip joint washer made of a flexible compound. It can be expanded over a tube and rolled into place to make a tight seal. It eliminates the use of a friction ring, normally required to prevent a slip joint washer from buckling when the nut is tightened.

If you write maker identify as IEN - 6028

STORING . . Bin type steel box stacks to hold stored parts accessibly

Source: BAY PRODUCTS INC.
3001 N. 16th St., Dept. IEN, Philadelphia 32, Pa.



To handle small parts

Three lengths are 16, 18 and 20 in. in this new Style 900D bin type box. Two widths are 10 and 12 in. and two heights are 6 and 8 inches. Five of the seven sizes in the line are made of 18-gage steel. Two are 16 gage. List price, plain, ranges from $2.56 to $3.43. List price, with green finish, is $2.78 to $3.73. A rim, surrounding the top, forms a step into which a box can be placed for secure stacking. A drop handle at the rear completes the assembly.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6029

SPRAY NOZZLES
for any Industrial Purpose

Air Conditioning	Wax Coating	Pest Control
Aerating Water	Hot Asphalt Spraying	Oil Burners
Degreasing	Humidifying	Aircraft
Fruit Crop Washing	Industrial Washers	Spray Drying

In addition, our engineering ability and precision craftsmen are prepared to develop custom nozzles to meet any special application requirements.

ESTABLISHED 1887

WM. STEINEN MFG. CO.
51 Bruen Street, Newark 5, N. J.

If you write maker identify as IEN - 6030

For All Sheldon Lathes less than 5 Years old...we have just published a new Parts List Manual, with:

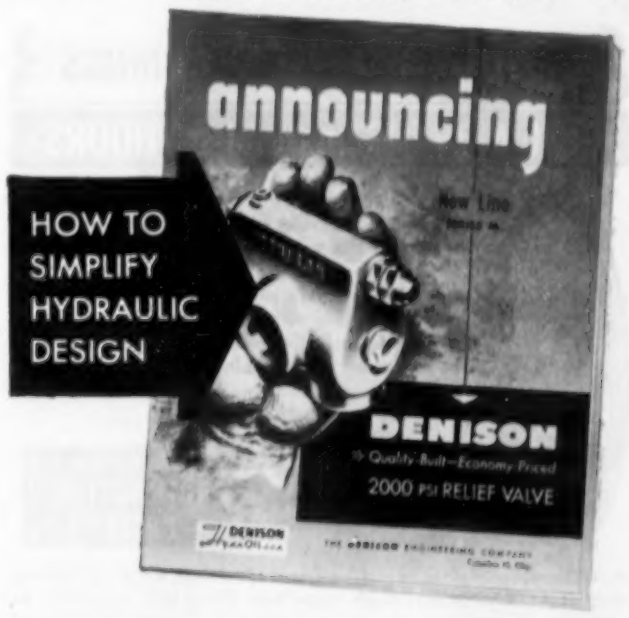
. . . . every lathe part and sub-assembly illustrated, named, numbered and positioned on explanatory exploded drawings.

. . . . a section which illustrates and describes each of over 50 modern Attachments and Accessories to make your Sheldon Lathe even more versatile, productive and valuable to you.

To get this valuable Parts List (and Accessory) Manual just write (1) the serial number of your Sheldon Lathe and (2) your name, and (3) your firm name and address, on a post card, letterhead, billhead or slip of paper and mail it to "Parts Manual"

SHELDON MACHINE CO., INC.
4208 North Knox Ave., Chicago 41, Illinois

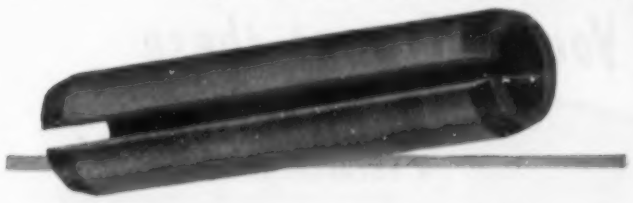
If you write maker identify as IEN - 6031



Just out. Free Bulletin No. 152 gives operating characteristics, capacities, sizes and dimensions for new line of low-priced Denison Series M Relief Valves for pressures to 2000 psi. Write for it today.

THE DENISON ENGINEERING CO.
1150 DUBLIN ROAD • COLUMBUS 16, OHIO
LEADING DESIGNER AND MANUFACTURER OF HYDRAULIC PRESSES AND COMPONENTS

If you write maker identify as IEN - 6032



Just drill and drive SEL-LOK SPRING PINS

Sel-Lok Spring Pins are slotted tubular pins that lock by spring action when driven into drilled holes. They eliminate the need to hold close tolerances and perform costly tapping, reaming, peening or milling operations. The chamfered ends make starting easy; the rounded edges of the slot, found only on Sel-Lok Spring Pins, eliminate scoring of holes.

Use Sel-Lok Spring Pins as rivets, hinge pins, keys; to replace tapered, grooved and cotter pins. They are available in a full range of diameters and lengths from .062 x ¼" to .500 x 4". For more information, write to STANDARD PRESSED STEEL CO., Jenkintown 14, Pa.

SEL-LOK SPRING PIN DIVISION **SPS**
JENKINTOWN PENNSYLVANIA

If you write maker identify as IEN - 6033

Goes further!

- No waste
- Lasting "Tack"
- Full measure
- Stays Fresh
- Best buy for plant supply

In single rolls, or 10-roll cartons — each roll wrapped in cellophane Jenkins Bros., (Rubber Div.), 100 Park Avenue, New York 17.

JENKINS Gold Seal Tape

FRICTION . . . RUBBER . . . PLASTIC

If you write maker identify as IEN - 6034

AUTO-DIESEL PLUNGER RINGS

Last MONTHS instead of HOURS

After a long period of developing and experimenting we have come up with a hardened steel Plunger Ring that die cast operators have been looking for. They have been in operation and have lasted over 122 days. We shall be pleased to send you records and they will amaze you. If you are operating die cast machines or casting zinc parts you will be very much interested in this new ring. They will reduce down-time as well as replacement cost. Why not investigate? It will pay.

Do you need piston rings in small quantities? We supply them at ATTRACTIVE PRICES!

Auto-Diesel specializes in making QUALITY Piston Rings and selling them at ATTRACTIVE PRICES—have been doing this since 1921. In addition with our setup we can make prompt deliveries. Auto-Diesel Piston Rings are of the highest quality made by men with years of experience. They are made up to 35" diameter for original equipment and for replacement in compressors, hydraulic cylinders, valves, etc.

Write Auto-Diesel for help on any ring problem you may have.

Write to

THE AUTO-DIESEL PISTON RING CO.
3139 Superior Avenue • Cleveland 14, Ohio
"RINGS and SHAPES *Since* 1921"

If you write maker identify as IEN - 6035

You will want these Publications...

◄ **COCHRANE SEPARATORS** remove moisture, oil, entrained solids from live steam, exhaust steam, compressed air and vapor gases. Pub. No. 2950.

COCHRANE MULTIPORT DRAINERS ► Continuously discharge condensate under vacuum or positive pressures up to 200 psi. Pub. 5201.

◄ **COCHRANE STEAM PURIFIERS** Improve efficiency and reduce steam consumption of prime movers. Pub. 5216.

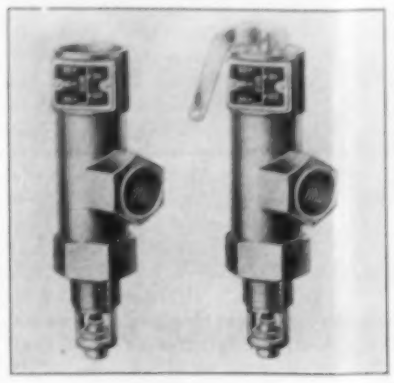
C100.14

COCHRANE CORP., 3152 N. 17th St., Phila. 32, Pa.
Send me the following Publications:
☐ No. 2950 ☐ No. 5201 ☐ No. 5216
Name_____
Company_____
Address_____
City_____ State_____

If you write maker identify as IEN - 6036

VALVE . . Reseating relief design to protect hot water storage tanks

Source: A. W. CASH VALVE MFG. CORP.
666 E. Wabash Ave., Dept. IEN, Decatur 60, Ill.



Bulletin RHV

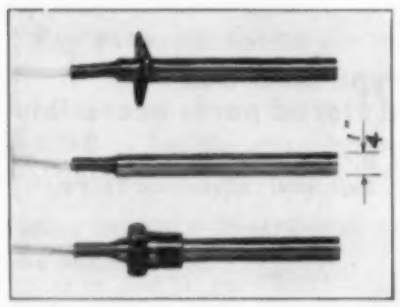
A revolving head and a calibrated pressure spring permit installing this new valve so the calibrated scale can be seen from any position. The spring can be set to the scale for any point of relief, up to the maximum 150 lb., without employing an auxiliary pressure gage. The valve protects hot water storage heaters against excessive pressure and dangerous overheating. It mounts a ¾-inch pipe threaded inlet and a ½-inch outlet, also pipe threaded.

Standard setting is for 125-lb. pressure and for 208 deg. F. Above these points, the valve will open its side exhaust connection. Following the opening action, the valve will close drip tight when the water has become sufficiently cool to eliminate danger. The temperature actuated mechanism functions as a thermostat to open the exhaust connection when water reaches 208 deg. F. The valve is known as Type RHV in plain construction and Type RHVVL with the test lever added as illustrated to the right.

If you write maker identify as IEN - 6037

THERMOSTAT . . Sealed assembly actuates circuit at preset temperature

Source: FENWAL INCORPORATED
218 Pleasant St., Dept. IEN, Ashland, Mass.



$12 to $14

Three designs, as shown in the illustration, are available for various mounting arrangements in this new midget thermostat in the Thermoswitch line. Each of the three measures ¼ in. in body diameter by about 2⅜ in. in length. Application is in temperature control in heated devices or as an over-heat detector for critical points on equipment. Point of actuation is set at the factory for a selected temperature in a range between minus 65 and plus 450 deg. F. Operating accuracy is within 1 to 5 deg. F., depending on the set point. The contacts rate 1 amp. on 110-volt ac. or 32-volt dc. Standard design calls for the contacts to close on temperature rise. The opposite can be specified.

External metal parts, including a flexible guard for the teflon coated leads, are made of stainless steel. The leads are fused into an extruded teflon block enclosed in the housing. The assembly is not hermetically sealed, but the block forms a moisture barrier to protect the mechanism.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6038

GEARS

of every description— made to your specifications

The gears you buy from E. B. Sewall are made by men who are fussy about specifications. They've got the finest equipment and know how to use it. If you specify .0002" tolerance, you get it—at each tooth on every gear we ship. We're in a brand new plant, equipped to handle your gear requirements. Send specifications and quantity for our quotation.

Your inquiry will be answered promptly

SEWALL

E. B. Sewall Mfg. Co., 696 Glendale St., St. Paul 14, Minn.

If you write maker identify as IEN - 6039

Goodbye Elbow Grease!

Use HAND-I-HACK* Portable POWER HACK SAW

TAKE IT EASY—let electricity do your muscle work! Hand-I-Hack eliminates the sweat and fatigue of hack sawing. Plugs into any wall or light socket. Truly portable — can be carried anywhere with one hand. Has swivel vise — operates in any position: horizontally, vertically, at an angle, even upside down. Maximum capacity: 3" x 3" square cut. Uses lower cost standard 10" hand blades — will cut solid bar stock and thin wall tubing, pipe, conduit, cable, rolled forms, etc.

Cutting small diameter brass tubing, using wood block false jaws.

Making a square cut on solid 3" steel bar.

• *Write for catalog and name of dealer*

*T.M. Reg. U.S. Pat. Off.

Lipe-ROLLWAY CORPORATION
Manufacturers of Automotive Clutches and Machine Tools
812 Emerson Ave., Syracuse 1, N. Y.

If you write maker identify as IEN - 6040

. . . when you splice with:

25-year-old Manson tape exceeds ASTM specs

A few years ago we received the remainder of a 25-year-old roll of Manson tape. We could not make all the ASTM tests because of the small amount, but the tensile strength test showed the sample to be about 25% above the ASTM minimum. It also withstood the ASTM dielectric strength test of 1000 volts without breakdown.

When you specify tape, remember you really want protection for the weakest part of the cable. Your best security is the best tape. Okonite and Manson tapes will keep the splice tight and waterproof and help cut down high maintenance costs. It's "spliced for life" when you use Okonite premium quality tapes.

Write for a set of instruction sheets, IE-5678; you'll find them helpful.

Available through authorized distributors only.

Made by

THE OKONITE COMPANY

PASSAIC OKONITE SINCE 1878 NEW JERSEY

2396

If you write maker identify as IEN - 6042

SELF-LUBRICATING BEARINGS AND MECHANICAL PARTS

SINTRLOY — DUCTILOY — SEALALOY

SINTRLOY — Powdered Bronze Bearings are used by the millions in sweepers, refrigerators, washing machines, portable electric and pneumatic tools, medium and light industrial equipment.

DUCTILOY—An extremely tough bearing material that is actually malleable and has a high resistance to shattering. Powdered Bronze Bearings and Mechanical Parts to be used in heavy duty applications where greater strength and shock resistance are required.

SEALALOY—Powdered Bronze Material used for mating rings in rotating mechanical seals to give excellent wearing qualities and shock resistance. Manufactured to your exact requirements.

National's widely experienced engineering and design departments are always at your service to help you with parts that must be specially designed to their particular application.

NATIONAL MOLDED PRODUCTS, INC.

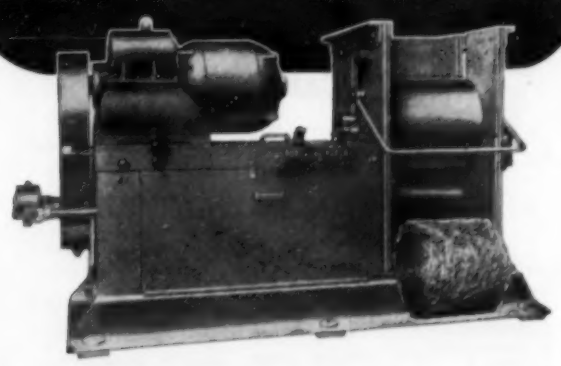
1945 Mill Street St. Marys, Pa.

If you write maker identify as IEN - 6043

NOW! Bundle Scrap into 18" and 24" Diameter Bundles

EASY TO HANDLE, SHIP, REMELT OR STORE . . . with the

McLanahan SCRAP BUNDLER



Designed for efficient bundling of scrap wire and strip metals, anything of a stringy nature, the new McLanahan Scrap Bundler "wraps" scrap into compact cylinders for easy handling. Fast and economical in operation, this new machine is the answer to your scrap bundling problems.

Write for new "Scrap Bundler" Bulletin Today!

McLANAHAN and STONE Corp.

Hollidaysburg, Pa. SINCE 1835

If you write maker identify as IEN - 6045

DRILLING . . Air-hydraulic head rates holes from 1/16 to 1 in. in steel

Source: KELLER TOOL CO.
Parks St., Dept. IEN, Grand Haven, Mich.

Catalog Section 92

Automatic cycling, to include fast approach, change to adjustable feed rate, retraction and return to clear chips, fast retraction and stop, characterize this new Airfeedrill. The unit also will alternate between rapid approach and feed with return to rapid approach and feed again when the drill is moving through several thicknesses of work alternating with open spaces.

Three basic sizes in the Series 92A have stroke lengths at 2 in., 3½ or 6 in. and 3½ or 7 inches. The smallest unit is equipped with a ¼-in. Jacobs chuck or a No. 1 Morse taper and long nose. The largest carries a ¾-in. Jacobs chuck or a No. 2 or No. 3 Morse taper and either a short or a long nose. Nominal free speed is 15,000 rpm. on the smallest unit, 250 rpm. on the largest. The throttled speed range, when drilling, is 3,000 to 10,000 rpm. on the smallest unit, 50 to 225 rpm. on the largest. Overall length ranges from 21½ to 45½ inches. Weight is from 9 to 48 pounds. Rated capacity at the pneumatic motor is 1/5 to 1 hp.

Controls, actuated by the torque reaction, enable the head to "peck-drill" and retract as often as may be required until the drill reaches a predetermined depth. This action also indicates condition of the drill point since the pecking action becomes more frequent as the drill dulls. The torque control can be employed at the option of the operator without disturbing the other adjustments such as thrust upon the work. Maximum thrust available on the three basic sizes is 180, 360 and 835 lb. based on 90 lb. line pressure.

The head is equipped with poppet valves to start the action or immediately retract the point. It takes a drill bushing at its nose to guide the drill. It is available with various means for mounting in permanent or interchangeable arrangement. Drive connection can be made to a tachometer shaft so the operator can read speed. Remote controls can be set up.

If you write maker identify as IEN - 6046

GAGE . . Woven fiber tape in leather case, 25 to 150 ft. lengths

Source: LUFKIN RULE CO.
Dept. IEN, Saginaw, Mich.

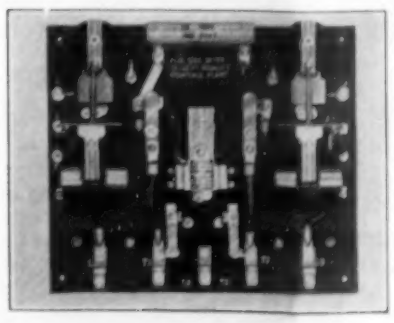
Non-conductor

Markings on this new Hi-Line nonmetallic woven fiber tape are recessed into the fibers and are protected by plastic coatings resistant to abrasion, cracking, mildew, moisture, temperature change. The smooth white surface can be kept clean without difficulty. The rear of the ring end is reinforced with a green plastic imprinted "Non-Metallic". The tape is available in five lengths, between 25 and 150 ft., at a list price of $8.30 to $29.80. The case is hand stitched leather. The fittings are plated.

If you write maker identify as IEN - 6047

CONTROL . . Electric equipment starts, stops engine driven generator

Source: AUTOMATIC SWITCH CO.
391 Lakeside Ave., Dept. IEN, Orange, N. J.



Bulletin on request

Closing an electric circuit on the load side of an engine driven generator, equipped with this new control, immediately results in starting the engine and in connecting the generator to the load as soon as it is up to speed. Opening the last load circuit on the generator results in stopping the engine drive. The load is held off, in the starting interval, until correct voltage and frequency are available at the generator. Then it is connected for normal operation. The control is available in ratings from 2 to 18.75 kva. Minimum starting load ranges from 60 to 100 watts for two or three-wire generators in the ratings named.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6048

60-DAY FREE TRIAL

of America's most popular industrial stool

A tired worker costs MUCH more than a good chair

- 4-way adjustable backrest
- Scroll shaped posture seat
- Tamper-proof tubular all-welded construction
- 3 adjustable height ranges.

Now test Royal's famous No. 515 stool in your own plant without cost or obligation. See why the country's top firms choose it for superior versatility and durability. Write for free trial stool today!

metal furniture since '97 Royal

ROYAL METAL MANUFACTURING CO.

175 North Michigan Avenue, Dept. 205, Chicago 1

If you write maker identify as IEN - 6049

DO YOU HAVE

Your B&W Bulletin On Seamless or Welded Stainless Tubing

. . . for Structural and Architectural Applications?

If not, send for it. It gives analyses and properties shapes, typical applications and advantages of B&W Stainless Tubing for the fabricator, architect and builder. Send for Bulletin TB-346.

TA-4052(LM)

THE BABCOCK & WILCOX COMPANY
TUBULAR PRODUCTS DIVISION
Beaver Falls, Pa.—Seamless Tubing; Welded Stainless Steel Tubing
Alliance, Ohio—Welded Carbon Steel Tubing

If you write maker identify as IEN - 6050

one standard FLEXLOC SELF-LOCKING NUT

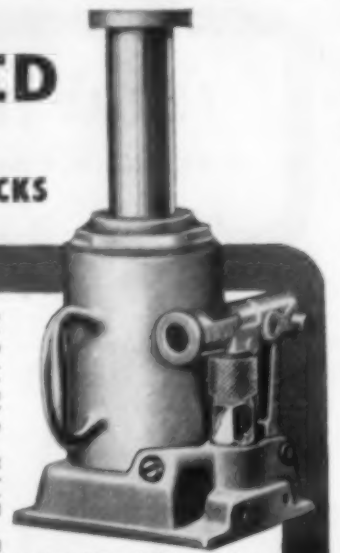
covers temperature range to 550°F

Because they are all metal and require no auxiliary locking device, FLEXLOCS lock and stay tight even at higher temperatures. See your local industrial distributor for literature and samples or write STANDARD PRESSED STEEL Co., Jenkintown 14, Pa.

FLEXLOC LOCKNUT DIVISION **sps**
JENKINTOWN PENNSYLVANIA

If you write maker identify as IEN - 6051

2-SPEED
LOW-LIFT
HYDRAULIC JACKS



- These are the Buda Jacks that bring big lifting muscles into cramped quarters. They're one-man operated; the load can be held at any height, or lowered with complete safety.
- One simple adjustment changes lifting speed—"Fast" for light or medium; "Standard" speed for capacity loads.
- 25 ton models are 8" and 10" high with 4" and 6" lifts. 35 ton models are 10" high with 6½" lifts. 50 ton model is 12" high with lift of 7".
- High-Lift, 2-Speed Hydraulic Jacks are also available for those who need extra lift without reblocking.

Write for new Bulletin 1515-B and details on BUDA's complete line of mechanical and hydraulic jacks.

"A jack for every job"

BUDA

A Division of Allis-Chalmers Manufacturing Company
THE BUDA COMPANY • Harvey, Illinois

If you write maker identify as IEN - 6052

FREE ASSEMBLY ENGINEERING SERVICE

Our experience has found the answer to knotty assembly problems for thousands of manufacturers—large and small. We can do the same for you. Just send us prints and all the parts to be assembled. In less than a week we'll send back a sample assembly properly riveted or staked, with a complete production analysis covering tooling, set up, operating procedure, costs, with a firm quotation on the HIGH SPEED equipment designed to do the job. ABSOLUTELY NO COST OR OBLIGATION.

3 BIG REASONS

for HIGH SPEED Staker Machines' outstanding performance and trade acceptance are found in its exclusive spindle design. A built-in pressure pad, (1) firmly secures the work for the blow, (2) compensates automatically for variation in thickness and, (3) insures delivering a uniform blow. This speeds up production, improves standards, and brings rejects down to minimum. Bench and pedestal models, foot and air operated. Immediate delivery. WRITE FOR LITERATURE.

Staker Machine

Backed by the Industry's Finest Tooling Service Program

HIGH SPEED HAMMER CO., INC.

Manufacturers of HIGH SPEED Wire Strippers, Cold Rivetors, Staking Machines and Precision Drilling Machines.

316 S. NORTON ST., ROCHESTER 21, N. Y.

If you write maker identify as IEN - 6053

FLORLINE MARKING MACHINE

WITH 3rd WHEEL GUIDE . . . MAKES SAFETY & PARKING LINES AT WALKING SPEED. 20 TIMES FASTER THAN HAND MARKING . . . OFTEN PAYS FOR ITSELF ON FIRST JOB!

- Third wheel 18" forward of carriage keeps machine "on track" long before marking begins
- Guide Wheel arm folds back at curb or wall, lets machine run right up to barrier
- Machine wheels to other areas of work with slight lift of handle
- Makes straight, curved, continuous or skip lines 2, 3 or 4" wide with interchangeable carriages
- Gravity feed, no motor or attachments, heavy gauge metal
- Holds 1½ gallons. Easy to clean and store

$97.50

F.O.B. Detroit
Fully Guaranteed

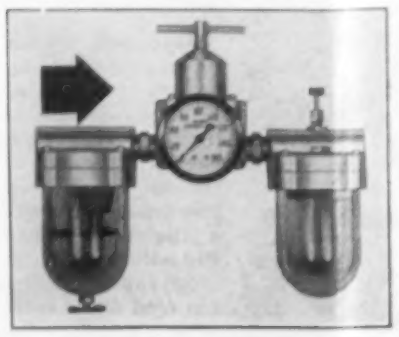
H.C. SWEET CO.

24393
W. 7 Mile Rd.
Detroit 19, Mich.

If you write maker identify as IEN - 6054

LUBRICATING . . Air line assembly also cleans air and regulates pressure

Source: AIR-MITE
4417 W. Carroll Ave., Dept. IEN, Chicago 24, Ill.



Pressure to 160 pounds

Compressed air enters this new combination assembly of filter, pressure regulator and atomizing lubricator through a pipe connection to the filter element on the left hand side. This element employs a porous cone shaped sintered bronze filter in connection with an air baffle. Moisture and foreign matter that separate out and collect in the transparent plastic bowl can be blown out at intervals by opening the drain cock.

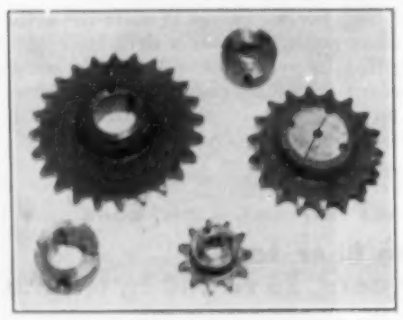
The clean air passes from the filter through the adjustable pressure regulator in which a piston cup is employed for quick accurate response to demand for air so there is no interval of lag between demand and supply. The clean regulated air enters the plastic bowl lubricator where it picks up and atomizes oil contained in the bowl and delivers it through a fine adjustment needle valve to a pipe connection at the right hand side.

The assembly employs permanent mold castings and brass fittings. The filter can be removed and cleaned whenever this becomes necessary.

If you write maker identify as IEN - 6055

DRIVE . . Roller chain sprockets mount on interchangeable split hubs

Source: MORSE CHAIN CO.
7601 Central Ave., Dept. IEN, Detroit 10, Mich.



Carried in stock

The company announces its expanded line of stock sizes in its Taper-Lock roller chain sprockets in both single and double hub types. All stock units in the new sizes, up to 26 teeth, are made of 0.4 carbon steel and can be flame hardened to order. Five bushing sizes are stocked in 54 bore diameters for shafts from 1 5/16 to 3½ in. in the No. 120 size, from 1 5/16 to 4 in. in the No. 140 size and from 1 5/16 to 4½ in. in the No. 160 size.

Number 120 Type B single hub sprocket is stocked in nine sizes from 13 to 26 teeth, the double hub unit in five sizes from 35 to 80 teeth. Number 140 Type B is stocked in ten sizes from 12 to 26 teeth and No. 140 Type C in four sizes from 35 to 70 teeth.

Number 160 Type B is available in eleven sizes from 11 to 26 teeth and No. 160 Type C is in three sizes from 35 to 60 teeth. The Type B driving sprockets rate 75, 95 and 125 hp. The new sizes supplement the previously developed line of sprockets for No. 40, 50, 60, 80 and 100 roller chain.

If you write maker identify as IEN - 6056

GRINDING . . Portable electric tool mounts 7 in. disc, weighs 14 pounds

Source: BLACK & DECKER MFG. CO.
715 E. Pennsylvania Ave., Dept. IEN, Towson 4, Md.

For utility use

Arc welds, irregularities on castings, can be smoothed down with this new tool, employing either a disc faced with abrasive, a saucer grinding wheel or a depressed center wheel. The tool will cut off studs, bolts and rivets. It can be employed for wood surfacing, semi-finishing, gouging and shaping in connection with an available rotary planer head.

Drive is by a universal motor with no-load speed at either 5,200 or 6,000 rpm. and with input at 110 or 220 volts as specified. Standard equipment includes a spindle lock, three-conductor cable and plug, reversible side handle, molded rubber pad, sanding discs, strap metal stand, clamp washer, suspension eye bolt.

Rotating shafts are mounted on factory lubricated and sealed ball bearings. A replaceable steel wear ring protects the front of the main housing from damage. Brush and commutator inspection can be made after removing a plate provided for this purpose. Air employed to cool the motor is deflected away from the operator. The control switch is enclosed to keep out dust and is guarded so it cannot be turned on accidentally. Application can be made in cleaning with a wire cup brush to remove paint, rust, scale.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6057

the heavy-duty hoist for low headroom service

GAIN MORE LIFTING ROOM

NORTHERN HI-LIFT
HEAVY-DUTY
ELECTRIC HOISTS

Heavy load capacity combined with high hook lift—unique in heavy-duty hoists—is the major outstanding feature in NORTHERN HI-LIFT HOISTS, providing for more efficient use of work and storage areas. Capacities: up to 15 tons, standard. Cab control if desired.

Write for Bulletin H-110-163

NORTHERN ENGINEERING WORKS, 2615 Atwater St., Detroit 7, Mich.

NORTHERN CRANES AND HOISTS

If you write maker identify as IEN - 6058

wash away your paint removing problems with AMAZING NEW

Wash Away

all purpose, miracle

PAINT REMOVER

3 TIMES CLEANER
6 TIMES FASTER

SAVES up to 60% in COSTS.
Prolongs life. Reduces maintenance.

No scraping! No burning! No sanding!
1. Strips vehicle clean (multiple coats) in 1 application
2. Strips any machine lightning fast
3. Strips 6 room house in 6 hrs. at big saving
4. Strips ship ready to paint 5-7 times faster
5. 30 seconds to dip parts completely clean
6. Strips 60 desks in 6 hours

some uses:
machine tools
small parts
boats
trucks
auto bodies
interior wood
exterior wood
steamships
railroads
airplanes
furniture
metal furniture
concrete
metal structures

Non toxic! Non flammable! Non-injurious to hands!

Strips paint, enamel, grease, lacquer, primer, from wood, aluminum, zinc, magnesium, duralumin, brass, steel, concrete, stucco, cement.

Works on any surface . . . *without skilled labor!* Removes multiple coats (20, 30, 40) in one application. WashAway adheres to any surface without run-off. Tested and used in government army rebuild programs. No scratching or marring. Will not pit or discolor non-ferrous metals.

ADDED SERVICE—The Paint Stripper Company will contract to strip anything anywhere in the world with WashAway or give you a demonstration in your own plant free of cost.

FREE! Write, call or wire for free WashAway booklet, for samples and application experience. Or specify your problem through I.E.N. readers service department.

PAINT STRIPPER Co. Inc.
19 Rector St. • BO 9-8931 • New York 6, N. Y.

If you write maker identify as IEN - 6060

SURPLUS BARGAIN!

Automatic Safety

IMMERSION HEATERS

UL

AUTOMATIC THERMOSTAT FOR CONSTANT TEMPERATURE CONTROL

ADJUSTABLE TEMPERATURE RANGE—100° TO 212° F.

EASILY INSTALLED

BOXED COMPLETE WITH INSTALLATION AND OPERATING INSTRUCTIONS

HEATING ELEMENT COPPER SHEATHED

TEMPERATURE REGULATOR FOR AUTOMATIC THERMOSTAT

AUTOMATICALLY MAINTAINS TEMPERATURE OF WATER OR OTHER LIQUID

FITS ANY STANDARD THREAD 1¼" OPENING IN PIPE OR TANK

CAN BE USED AS PORTABLE UNIT

WHEN ORDERING:

Specify voltage and wattage desired. Available in . . .

110 volt-600, 1000, or 1500 watt.
220 volt — 750, 1000, 1250, 1500, or 2000 watt.

FULL PRICE PREPAID Anywhere in U.S.A. $9.95 COMPLETE

RECONVERSION EQUIPMENT CO.

EAST SPARTA, OHIO

Telephones: 2366, 2398 or 3011

If you write maker identify as IEN - 6061

THE TORRINGTON COMPANY
Specialties Division
900 Field Street, Torrington, Conn.

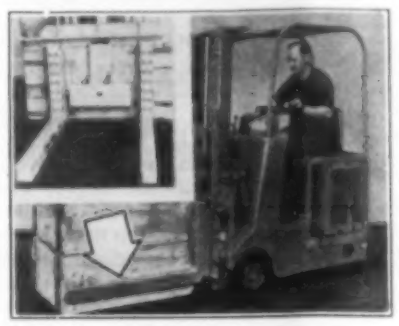
TORRINGTON SPECIAL METAL PARTS

Makers of Torrington Needle Bearings

If you write maker identify as IEN - 6063

TRUCK . . Hydraulic attachment applies side clamping forks on load

Source: ELWELL-PARKER ELECTRIC CO.
4205 St. Clair Ave., Dept. IEN, Cleveland 3, Ohio



Moves in to grip

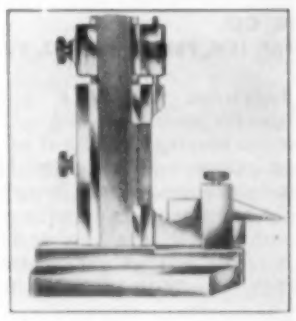
Pointed studs are mounted on the inner side surfaces of the forks in this new hydraulic load clamping attachment. It has an opening range from 18 to 66 in. to pick up and carry wood cases and similar loads or to serve in standard manner under a pallet. The two studs, at the front of the forks, can be employed alone to act as pivots to dump a box or turn it over.

Control centers at a plunger type hydraulic valve at the operator's position. The forks are secured to the hydraulic mechanism which rides the truck carriage. They can be supplied in specified sizes. The complete assembly is available from the manufacturer to fit its line of industrial trucks.

If you write maker identify as IEN - 6064

GAGE . . Vernier height unit, stainless steel, chromium plated

Source: FOSTER SUPPLIES CO.
6122 Milwaukee Ave., Dept. IEN, Chicago 30, Ill.



Users like it

Graduations and figures stand out clearly against the dull chromium background of this new stainless steel height gage. Glare and eye strain are eliminated. The gage employs a hardened beam and a 1.225-in. adjustable vernier also made of chromium plated stainless steel. The gage is available in six heights between 12 and 48 inches.

If you write maker identify as IEN - 6065

LADDER . . Tubular steel frame, caster mounting, non-skid rubber treads

Source: ARROW PRODUCTS INC.
417 Front Ave., Dept. IEN, Grand Rapids 4, Mich.

Bulletin, "Roll-Ezy"

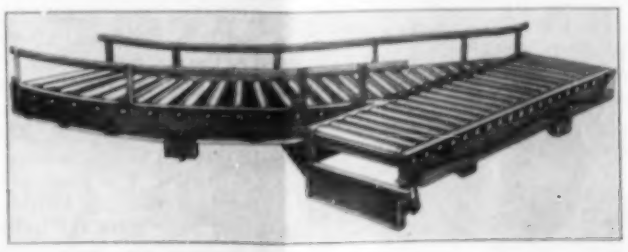
Roll-Ezy trade names a new tubular steel step ladder with mounting on free swiveling casters. The ladder rides free until an operator puts his weight on the steps. This compresses springs in the caster mounts so four rubber tipped legs move down to rest securely on the floor. Construction includes a tip-proof base, Globe Safety Grip Strut steel grating steps and steel pipe hand rails.

The rails enclose both sides of the steps and extend 32 in. above and around the top step on the higher models. One to eight-step assemblies are available for work levels from 72 to 141 inches. Applications are in stock rooms, warehouses, multi-tier storage areas and in plant maintenance.

If you write maker identify as IEN - 6066

CONVEYING . . Live roll Y-section prevents jamming on converging lines

Source: HARRY J. FERGUSON COMPANY
115 West Ave., Dept. IEN, Jenkintown, Pa.



Loads cannot clog

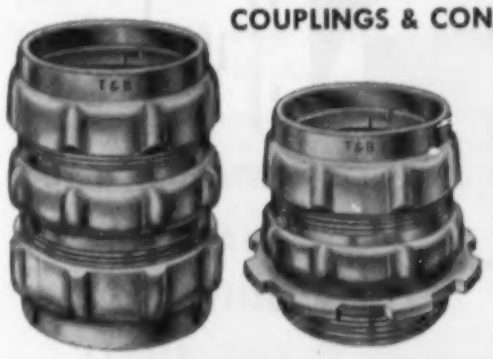
A curve and a straight section, both driven by a single ½-hp. gear head motor, make up this new live roll Y-section. The motor connects through universal joints to drive chains on the sides of the section elements that mesh with sprockets on the ends of the rolls. Transparent plastic covers the chains for worker protection. The conveyor section is available for speeds to 90 fpm. and in specified widths and load capacity.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6067

If you write maker identify as IEN - 6068

NEW T & B STEEL E. M. T. COUPLINGS & CONNECTORS



stronger, straighter runs *because* they're

LONGER

They're as much as 50% longer than conventional fittings for E.M.T. The extra-long fitting provides a much greater area of firm, rigid support for the tubing wall. Conduit *has* to line up properly. Runs are straighter. Greater length also allows more tolerance when cutting.

All steel construction — body, gland, ring and locknut — is your assurance of uniform strength and dimensional accuracy.

Easy to install. Simply run up gland nut and the entire assembly tightens in place. Same wrench size fits both body and gland hexes. UL Raintight Approved.

Order a supply today for your next job . . . or . . . send to T&B for free samples and additional literature. T416

THE THOMAS & BETTS CO.
INCORPORATED
60A Butler Street • Elizabeth 1, New Jersey
Thomas & Betts Ltd., Montreal, P. Q., Canada
MANUFACTURERS OF FINE ELECTRICAL FITTINGS SINCE 1898

If you write maker identify as IEN - 6069

standardize on standard

use it anywhere

HALLOWELL CARRY-TOOL

It's the most convenient carrier in the shop. Use it on assembly lines, at machines, in the toolroom. Use it for inspection, stockroom, maintenance, and mounting small tools. Drawers have ball bearing rollers and padlock attachments. Stocked and sold by industrial distributors. Write for literature. STANDARD PRESSED STEEL CO., Jenkintown 14, Pa.

HALLOWELL SHOP EQUIPMENT DIVISION SPS JENKINTOWN PENNSYLVANIA

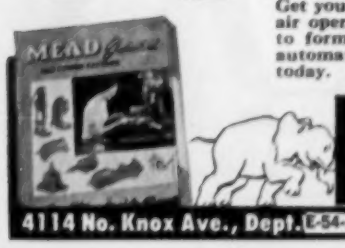
If you write maker identify as IEN - 6070

Suggestions for FASTER CHEAPER PRODUCTION

New MEAD INDUSTRIAL AIR POWER CATALOG ready

Engineers! Production Men! Purchasing Agents!

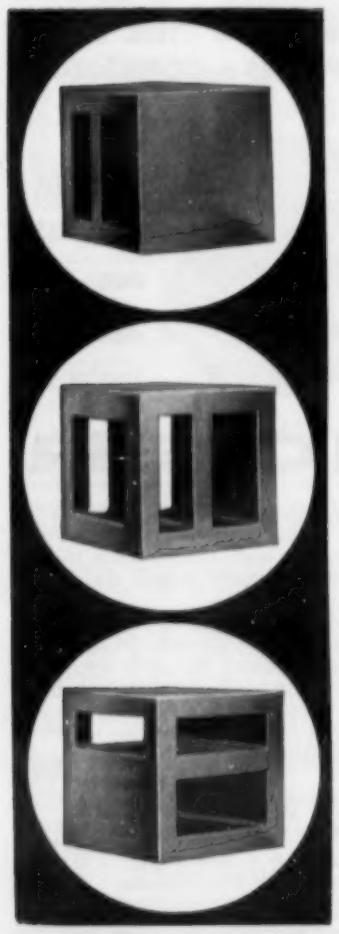
You will find many valuable suggestions for speeding work, saving your plant time and money in this lavishly illustrated Mead Air Power Catalog! Get your copy. See how Mead-designed air operated devices can be assembled to form low-cost automatic or semi-automatic production set-ups! Write today.



MEAD SPECIALTIES COMPANY

4114 No. Knox Ave., Dept. LS-54-A, CHICAGO 41, ILLINOIS

If you write maker identify as IEN - 6071



3 IN 1

COMBINATION TOOL

CHALLENGE UNIVERSAL BOX ANGLE

This new versatile tool has the clamping facilities of an *angle iron* . . . the stability, balance and accuracy of a *box parallel* . . . the perpendicular flat surface of an angle plate. Made of high grade special analysis semi-steel, heat treated and precision ground. Furnished in two sizes — 6x6x6 and 8x8x8 inches. Other sizes can be made to order.

747

Challenge TRADE-MARK ®

THE CHALLENGE MACHINERY COMPANY

Office, Factories and Show Room: Grand Haven, Mich.

If you write maker identify as IEN - 6072

For stress, wear or vibration a

GRIPCO LOCK NUT

will hold tighter, wear longer, cost less!

The Gripco Lock Nut, with its simple, one-piece design, has given industry a tighter, more positive holding action for quicker fastener application at less initial cost. It provides frictional resistance to vibration and loosening torque—is faster to use—permits repeated removal and reapplication—simplifies production—lowers manufacturing and maintenance costs—has improved the durability of hundreds of products—and has insured greater customer satisfaction. If stress, wear or vibration is your problem, specify Gripco Lock Nuts for greater holding power. Impervious to oil or water. Write for samples and full details.

GRIPCO PRODUCTS INCLUDE: Gripco Lock Nuts, New Gripco "Clinch" Nuts, Gripco Hi-Nuts, Gripco Pilot-Projection and Countersunk Weld Nuts with or without Gripco locking feature.

GRIP NUT COMPANY

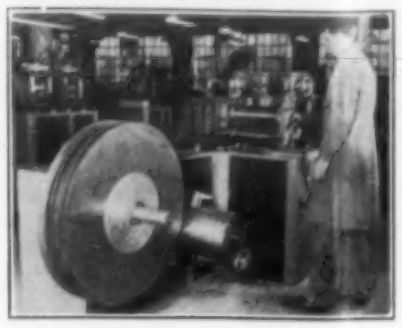
"after 50 years still holding strong"

310-S S. MICHIGAN AVE., CHICAGO 4, ILL.

If you write maker identify as IEN - 6073

SLITTING . . Roll type machine for metals, plastics, wire cloth

Source: STANAT MFG. CO.
47-30 37th St., Dept. IEN, Long Island City 1, N. Y.



Model S-180 in operation

Model S180, with a basic arbor measuring 2½ in. in diameter for coil width of 8, 12, 18 and 24 in., and Model S-350, with a 3½-in. arbor, are new assemblies in the company's line of slitting equipment. Model S-180 takes 5½-in. cutters which can be ground down to 4½ in. before being discarded. Model S-350 takes an 8-in. cutter. This also can be reground repeatedly.

The machine is available with various types of recoilers including plain arbor, solid drum, core plate and expanding drum designs. Their drive can be from the motor driving the slitting machine or from an individual motor. Recoiler capacities range to 6,000 pounds. Pay-offs and uncoilers are designed to meet given requirements. Exit and entry rolls, stock guides, feed and run-out tables, for sheet stock, and other special devices are available to order.

If you write maker identify as IEN - 6074

LUBRICATING . . Semi-solid grease is impervious to petroleum solvents

Source: KEYSTONE LUBRICATING CO.
21st & Clearfield Sts., Dept. IEN, Philadelphia 32, Pa.

Technical data upon request

Lubricant A-9 is a new grease for use in plain and anti-friction bearings, glands of solvent pumps, and in lubricated valves, particularly where it is likely to come in contact with petroleum solvents. It is serviceable in a temperature range between 20 and 400 deg. F. and is available in a number of densities for application in cups, guns and weight loaded lubricators. Packaging is in 1 and 7-lb. cans, 25-lb. pails, 100-lb. kegs and 400-lb. drums.

If you write maker identify as IEN - 6075

GRINDING . . Abrasive belt machine employs grinder and backstand idlers

Source: HAMMOND MACHINERY BUILDERS INC.
1600 Douglas Ave., Dept. IEN, Kalamazoo, Mich.

Bulletin 635

Illustrated is new assembly of one of the company's Model VRO variable speed grinding machines and two backstand idlers. The idlers are mounted on a structural frame with adjusting handles located in front of the operator. The machine is suited for plants where limited space makes it impossible to mount the backstand idlers in horizontal relation to the grinder spindle. The supporting structure is attached to the base of the grinder.

Abrasive belts, to 14 ft. in length, can be used. The grinding machine is available in 5, 7 and 10-hp. sizes. Floor space measures 60 by 39 in. in two of the sizes and 69 by 39 in. in the largest. Speed range is 1,500 to 3,000 rpm.

If you write maker identify as IEN - 6076

CASTER . . Ball bearing design, disc wheels and demountable tires

Source: BASSICK COMPANY
439 Howard Ave., Dept. IEN, Bridgeport 2, Conn.

Catalog 4R-54

Series 68, H68 and H99, swivel design, and Series 08, H08 and H98, rigid, have been added to the company's lines of industrial casters. Wheel sizes range from 3½ to 8 inches. Load rating is 140 to 350 pounds. Overall height is about 5 to 9½ inches. The assembly includes ball bearing swivels and wheel hubs with the balls riding in hardened races. The swivel is sealed to prevent entrance of dirt and water or escape of grease, when this construction is specified, in the Series H99.

Construction is characterized by the bolted disc wheel and the demountable rubber tire. Rubber treads are vulcanized to a rigid tire base to prevent distortion of the soft tread. Top plate dimensions range from 3¾ by 4⅝ in. to 5 by 5½ inches. List price is $2.30 to $9.50.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6077

AVAILABLE FROM STOCK FOR IMMEDIATE DELIVERY

acrylic rods and tubes

CLEAR CRYSTAL METHYL METHACRYLATE — Rods and tubes for industrial novelty display, models and all other fields.

SIZES AVAILABLE

RODS

1/8"	9/16"
3/16"	5/8"
1/4"	3/4"
5/16"	7/8"
3/8"	1"
7/16"	1 1/8"
1/2"	1 1/4"

TUBES

1/16" wall 1/4" O.D.	1/8" wall 1/2" O.D.
5/16" "	5/8" "
3/8" "	3/4" "
1/2" "	7/8" "
5/8" "	1" "
3/4" "	1 1/4" "
7/8" "	1 1/2" "
1" "	1 3/4" "
1 1/4" "	2" "

Special sizes to order

Write for price lists and samples today

ACE PLASTIC COMPANY
Precision Extruders and Fabricators

91-24 Van Wyck Expressway, Jamaica 35, N. Y.

If you write maker identify as IEN - 6078

Routine delay your product development?

Research roughs out in pencil a contour change on trip cam SB-107. The rough goes to the drafting room for a drawing. The approved drawing is printed, and prints passed around. Eventually somebody in the shop makes the part.

Weeks and months go by before SB-107 is ready to test. And management wonders why it takes years, and so much expense, to bring out a new model!

TODAY in many companies the routine is cut short by making Ozalid prints of the rough sketch—and starting work right away.

An Ozalid® machine copies anything drawn, typed, printed or photographed on translucent paper or cloth—turns out a finished, dry, clear print of the same size, in less than a minute. Prints can be changed, modified, or erased.

The convenience of quick, plentiful prints at low cost saves time, speeds work, cuts costs.

Call the Ozalid office or distributor (in phone book) for a demonstration. Or write for free brochure to 121 Ozaway, Johnson City, New York.

OZALID—A Division of General Aniline & Film Corporation . . . *From Research to Reality.* In Canada, Hughes Owens Company, Ltd., Montreal.

Ozalid Printmaster *makes copies up to 54 inches wide, at speeds up to 30 feet a minute. Simple to operate. Low maintenance. Prompt service.*

OZALID

If you write maker identify as IEN - 6080

NOW! CHOOSE THE HOBBS SLITTER BEST FOR YOUR MATERIALS!

From our three types of Hobbs cutters, use the best for your materials—shear-type, rotary contact, or razor-type. Easily handle tender, delicate film as well as heavier weights of paper, plastics and treated fabrics.

MODEL 45 SLITTER & REWINDER

Hobbs Slitters and Rewinders (formerly "Jacques") are low-cost, low maintenance machines. Warner electric clutch and brake enable smoother starts and stops — protect light materials. Adjust power to clutch simply by turning rheostat button! Three models now available to cut widths up to 30", 40", 45". Special design frictions rewind up to 18" diam. Some materials up to 20/1000" thick.

Send now for new, free booklet. Ask about free factory test run, using your material.

HOBBS MANUFACTURING CO.
40 Salisbury St., Worcester 8, Mass.
EST. 1883
New York Office: 132 Nassau Street
Chicago office: 549 West Washington Blvd.

Manufacturers of Modern Converting Machinery

If you write maker identify as IEN - 6081

NEW R&S DUST-TIGHT LIGHTING FIXTURES

...for hazardous locations where flammable or explosive dusts are present. Class II, Groups E, F, G and Class III.

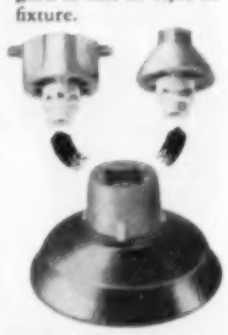
With 2 Exclusive Design Features

R & S Type DL Lighting Fixtures contribute outstanding advances in fixture construction and installation simplicity! They operate very cool – 'way below allowable temperatures for this type of installation.

Two *exclusive* design features, in addition to basic advantages common to other well-constructed dust-tight fixtures, assure faster, easier installation, cleaning and relamping. They're made of cast aluminum alloy—designed with streamlined simplicity – and shaped to prevent dangerous accumulation of dust particles. Write for Data Sheet No. 7151.34.

● Pendent and Junction Box bases are standard to all fixtures. They will accommodate any style fixture – globe – reflector assembly in either 100 watt or 200 watt sizes, providing complete interchangeability.

1 Lampholders are located within the conduit box assembly of both pendent and junction box types, permitting installation and wiring without regard to size or style of fixture.



2 All fixture – globe – Reflector assemblies fit either base and are easily attached or interchanged by means of a simple bayonet slot and screw arrangement, without disturbing electrical connections.

RUSSELL & STOLL COMPANY, INC., 125 Barclay Street, New York 7, N.Y. C-6

RUSSELL & STOLL
PRECISION-BUILT ELECTRICAL EQUIPMENT—SINCE 1902

"I WISH I HAD"

(Continued from Page 128)

SURPLUS . . "I wish we had a buyer for 350 No. 3 and 150 No. 4 Morse taper sockets made of hardened tool steel. The stock is in Cincinnati." **IEN W-51**

SURPLUS . . "I wish we had a buyer for approximately 90,000 Southco blind rivets. They are Type 38N4, 5/32 in. in diameter with 100 deg. countersunk head. Grip range is 0.148 to 0.173 inch. Metal is A17ST4 with stainless pin. The rivets are in stock in Red Lyon, Penna." **IEN W-52**

SURPLUS . . "I wish we had a buyer for a No. 54 Torit dust collector. Equipment includes a 1/3-hp. motor for 110-volt single phase ac. with a 7-in. fan and a No. 16 suction tube assembly. There is also a starter, a cleaning brush and instructions. Serial is 13258. Bradford, Pa." **IEN W-53**

SURPLUS . . "I wish we had a buyer for 35 Arnold grinding gages now in storage in New York City." **IEN W-54**

SURPLUS . . "I wish we had a buyer for a quantity of carbide tipped boring tool bits including 250 measuring ⅜ in., 450 ½ in. and 300 that are ⅝ inch. The bits are in storage in New York City." **IEN W-55**

SURPLUS . . "I wish we had a buyer for 130 lb. of Westinghouse phos-copper brazing rod 3/32 by 26 in., Style 970234. It is in original 10-lb. packages in Cincinnati." **IEN W-56**

SURPLUS . . "I wish we had a buyer for 822 oil seals, Type Victor No. 60493 for a 1 15/32 in. shaft. The seal measures 2.441 in. in outside diameter and 15/32 in. in width. The stock is in Cincinnati." **IEN W-57**

SURPLUS . . "I wish we had a buyer for 14,000 step bolts measuring ⅜-16 by 2. The bolts are zinc plated but do not have nuts. Our cost was $55 per 1,000. Skokie, Ill." **IEN W-58**

SURPLUS . . "I wish we had a buyer for a Junior photostat machine, letter size, complete with a subject holder and E. K. lens and prisms, developing and fixing trays. The machine operates on 110-volt single-phase, 60-cycle ac. It is in storage in Camden, N. J." **IEN W-59**

SURPLUS . . "I wish we had a buyer for two new sight feed acetylene generators that we purchased but have not used. Current quotation from their maker is $495 each. The generators are in original crates in Archbald, Pa." **IEN W-60**

SURPLUS . . "I wish we had a buyer for six 40 gal. electric water heaters, Rheem Series 81-40S, each with one 2,000-watt lower element to operate on 220-volt ac. The heaters are in storage in Glendale, Calif." **IEN W-61**

SURPLUS . . "I wish we had contact with a company that would like to trade a DoAll or Grob metal cutting band saw for a Cleveland Automatic screw machine that we have in stock. The screw machine is Model A, single spindle, size 4¾ in., Serial 22322. We are in Greensboro, N. C." **IEN W-62**

If you write maker identify as IEN - 6083

FILTERING . . Intake cleaner for air to internal combustion engine

Source: AMERICAN AIR FILTER CO.
215 Central Ave., Dept. IEN, Louisville 8, Ky.

Bulletin 160A

Low resistance to air intake characterizes the operation of this new Type P and PV Cycoil oil bath air cleaner to suit it for use on internal combustion engines that employ turbo chargers and pressure blowers for scavenging. Type P is designed for engines operating at fairly constant speeds and Type PV for engines that operate at variable speeds between idling and capacity rating.

Eight sizes in each type measure about 38 to 99 in. in maximum diameter at the skirt surrounding the air intake by about 66 to 118 in. in height. Capacity range, at 2 in. of water gage, is 1,950 to 15,200 cfm. for Type P and 2,000 to 14,000 cfm. for Type PV. Two of the units can be installed in series so the air passes first through one served with water for cooling action and then through one served with oil for the cleaning action.

Dust laden air enters through a screened opening surrounding an oil flooded chamber, the air and dust moving upward through perforations in an oil flooded plate to wet the dust. Continuing upward movement passes the air through a conical filter that promotes outward radial flow of the oil droplets to the perimeter of the housing where the oil is out of the air stream and can run down, with the dust it has picked up, to the oil reservoir at the bottom of the oil chamber. Here the dust accumulates as a sludge for removal from time to time. A motor driven pump draws the oil from the chamber to recirculate it through the nozzle at the center of the perforated plate.

If you write maker identify as IEN - 6084

...engineered to OUTLIVE your plant!

Famous Plastic Rock now unites with special steel grid reinforcing to form a practically indestructible industrial floor which withstands terrific abuse. Offered together for the first time as a complete unit — *everything included.* Non-skid, virtually wear-proof; perfect bonding, no spalling or loosening; for old or new floors of concrete or wood.

Put an end to floor maintenance. Get Bulletin 293-Q-5.

UNITED LABORATORIES, INC.
16803 Euclid Avenue, Cleveland 12, Ohio
FLOORING • ROOFING • SPECIAL PAINTS
Field Representatives Coast to Coast

If you write maker identify as IEN - 6085

universally acclaimed! the *New* CP universal electric impact wrench

Here's a wrench that can get into tight spots! It's the speedy ⅜" capacity CP-903R with its bonus capacity rating of ⅝"... develops 2,000 blows per minute. Designed for awkward spot jobs, its nose section measures 2" in diameter. Snap switch on the handle prevents reversing while wrench is running . . . handle is centered at balance point for effortless handling. Write *Chicago Pneumatic Tool Co., 8 East 44th St., New York 17, New York.*

Chicago Pneumatic

PNEUMATIC TOOLS • AIR COMPRESSORS • ELECTRIC TOOLS • DIESEL ENGINES
ROCK DRILLS • HYDRAULIC TOOLS • VACUUM PUMPS • AVIATION ACCESSORIES

If you write maker identify as IEN - 6086

BACK PRESSURE VALVES...

No. 135 illustrated — Klipfel Cup Disc back pressure and relief valve cuts size required to half that of other types. Very large capacity with closer, chatter-free regulation. Closes tight with minimum blow down. For maximum inlet pressures 80 to 300 lbs. according to size. Other types available. GET BULLETIN 648.

Call Your Supply House or See Classified Phone Directories for Nearest KLIPFEL Distributor.

Alabama Birmingham
Arizona Phoenix
California San Francisco, Los Angeles
Colorado Denver
Florida Tampa
Georgia Atlanta
Illinois Chicago
Indiana Evansville, Indianapolis
Louisiana New Orleans
Massachusetts Boston
Michigan Detroit
Minnesota Minneapolis
Missouri St. Louis, Kansas City
Montana Billings
New York Buffalo, New York, Syracuse
New Mexico Albuquerque
North Carolina Greensboro
Ohio Cincinnati, Cleveland
Oklahoma Tulsa
Oregon Portland
Pennsylvania Pittsburgh, Philadelphia
Texas Dallas
Tennessee Memphis, Nashville, Knoxville
Utah Salt Lake City
Washington Spokane, Seattle
Wisconsin Milwaukee
Canada Montreal

K-940

Klipfel VALVES, INC.
1072 Lincoln Avenue
Hamilton, Ohio

If you write maker identify as IEN - 6087

INSTANT FLOOR PATCH

REPAIRS BROKEN CONCRETE IN A HURRY!

TEST ON TRIAL OFFER

Patch broken concrete floors without tying up plant traffic. Use durable INSTANT-USE — a tough plastic material which takes traffic immediately. Ideal for repairing cracks, holes, ruts. Bonds tight to old concrete . . . right up to a feather edge.

JUST TAMP! TRUCK OVER!

Simply shovel INSTANT-USE into hole or rut — tamp — and your floor is restored to solid smoothness — ready for traffic. Used indoors or out. Immediate shipment.

MAIL COUPON FOR TRIAL OFFER

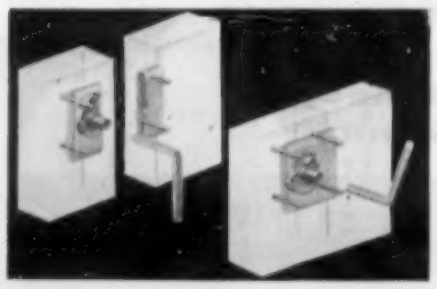
INSTANT-USE

FLEXROCK COMPANY
3606-Z Filbert St., Philadelphia 1, Pa.
Offices in principal cities

Please send me complete INSTANT-USE information, details of TRIAL ORDER PLAN and HAND BOOK OF BUILDING MAINTENANCE — no obligation. (Clip and attach Coupon to Company letterhead).

Name ..... Title .....
Company .....
Address .....

If you write maker identify as IEN - 6088



Serrated, tapered cam engages lip—draws panels tightly together when turned by any hand tool.

How to fasten panels securely —and take them apart easily

Roto-Locks fasten demountable panels quickly and securely — at right angles or butt joint. Just turn the tapered cam to lock, turn again to unlock. Check these other Roto-Lock features, too:

1. **Roto-Lock carries both heavy shear and tension loads.**
2. **Exerts enough pressure to form an air-and water-tight seal when gaskets are used.**
3. **Fastens in any mis-aligned or semi-open position.**
4. **Recesses completely into panels.**
5. **Has no springs or delicate mechanical parts.**

Portable shelters, air freight and cold storage shipping containers, walk-in coolers, demountable furniture and scaffolding are a few of the many products using Roto-Locks. Write today for catalog.

SIMMONS FASTENERS
SPRING-LOCK • QUICK-LOCK • ROTO-LOCK
Simmons Fastener Corp., 1758 N. Broadway, Albany 1, N. Y.

If you write maker identify as IEN - 6089

This New Catalog Tells You
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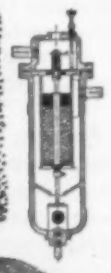

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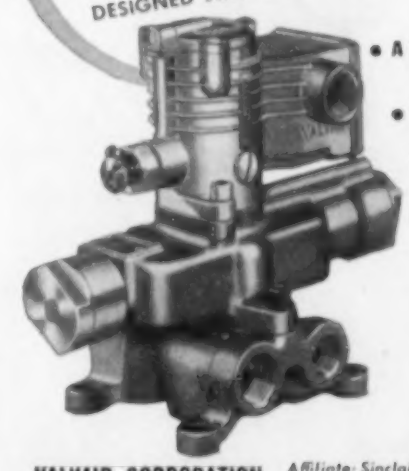
Certain copies of this publication for the next few months will carry a post card on the front page. It is intended for your use to make sure you still want to remain on our mailing list. Please watch for the one with your name on it.

OK or correct your name and address as they appear on the card. Please also check the questions asked. They are simple, self-explanatory, essential to our circulation audit.

If you write maker identify as IEN - 6094

SPEED KING
SOLENOID PILOT OPERATED CONTROL VALVE
by VALVAIR
DESIGNED AND BUILT TO J. I. C. STANDARDS



- A Hefty Assist to Automation
- Fully Enclosed
- Integral Junction Box

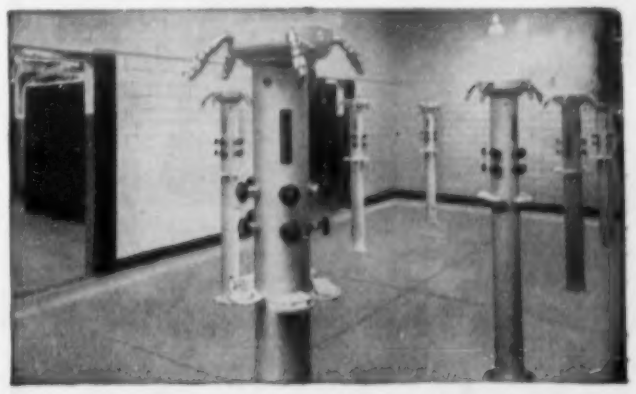
Get 20,000,000-cycle life and more with Speed King, industry's most rugged and compact control valve. 2-way, 3-way, 4-way and 4-way-5-port (2-pressure) models for pneumatic, hydraulic and vacuum service; pipe sizes—¼" through 1".

VALVAIR CORPORATION Affiliate: Sinclair-Collins Valve Company
959 Beardsley Avenue, Akron 11, Ohio

Rely Upon Valvair DIVERSATILITY

ASK FOR BULLETIN "Q-5"

If you write maker identify as IEN - 6095



THEY SELECTED
BRADLEY COLUMN SHOWERS

Without the usual partitions of the 3-stall or 5-stall Bradley Showers, the Column Showers are otherwise complete with drain fittings, sprayheads, soap trays, mixing chamber for temperature control with hot and cold water control valves. Ready to install.

Floor space is saved and by placing Showers away from walls, wall water-proofing is not required and space may be used for lockers and benches.

Here's the answer to your Shower requirements at low cost. Write for Catalog 4701-CS. BRADLEY WASHFOUNTAIN CO., 2219 W. Michigan Street, Milwaukee 1, Wisconsin.

BRADLEY Showers
Distributed through Plumbing Wholesalers

If you write maker identify as IEN - 6092

SABIN
labor saving
BARREL TRUCK→

NEW WAY. The Sabin way. Only ONE man needed.

Saves labor because it makes it easy for one man to pick up and move containers up to 800 pounds—a job that requires one or two helpers with an ordinary truck. Loads are picked up by simply running truck up to container, hooking on at top and pulling back on handle. *Third Wheel feature* assures an extra measure of safety in moving loads.

WRITE FOR BULLETIN NO. 48-A

THE SABIN MACHINE CO.
6540 Carnegie Avenue • Cleveland 3, Ohio

If you write maker identify as IEN - 6093

FASTER, LOWER COST, BETTER Pipe Identification with

Brady ALL-TEMPERATURE Pipe Markers

NEW... STICK TO PIPES 300°F. HOT... -300°F. COLD

It's more efficient, safer, thriftier to mark *what* flows *where*—with Brady self-sticking Pipe Markers. They stick—and *stay stuck* to pipes, at continous temperatures from −300° F. to +300° F. Off dispenser card in a hurry—on the pipe to *stay* and be *seen* . . . for real savings in material cost and application time. *Background color and legend-overprint combinations meet A.S.A. Standard A-13.* And Brady Markers are silicone plastic over-coated to stay clean, highly visible. Over 1000 stock markers—or we'll make any kind, with any legend, to your exact order! For *free* samples, useful literature, write—

MANUFACTURERS OF SELF-STICKING INDUSTRIAL PRODUCTS
W. H. BRADY CO.
700 WEST GLENDALE AVE. • MILWAUKEE 12, WIS.

WIRE MARKERS • SPECIAL MARKERS • WRITE ON LABELS • PIPE & CONDUIT MARKERS • SAFETY SIGNS • CONTAINER MARKERS • SCOTCHLITE SIGNS • AISLE MARKERS • WARNING STRIPES • PRINTED ROLL TAPES • PRE-CUT MASKS • PINSTRIPE STENCILS • AIRCRAFT FLUID LINE MARKERS

If you write maker identify as IEN - 6096

LEAKY BASEMENTS?
FOUNDATIONS, ELEVATOR PITS
TUNNELS, DAMS, RESERVOIRS

Then Use
STONHARD STONTITE
Stops Running Water In FIVE Minutes

STONTITE seals active leaks and water-seepage without delay, no costly preparation or excavation is required. It can be applied from the open side, even against hydrostatic pressure and bonds perfectly, leaving no fine cracks to permit further seepage. Send today for our *free* STONTITE Booklet.

STONHARD COMPANY
Building Maintenance Materials Since 1922
102 Stonhard Bldg., 1306 Spring Garden St., Philadelphia 23, Pa.

Yes, I want details on STONHARD STONTITE 102/5/54
Name
Company Title
Address
City Zone State

If you write maker identify as IEN - 6097

6-inch Plant Wrecker

Just an ordinary, harmless bolt, but mixed with materials going through a pulverizer, it not only wrecks equipment, but can spark fires and explosions causing thousands of dollars damage.

Keep this troublemaker out with a Stearns spout magnet! Easily installed in conveyors, feed chutes, etc., powerful Stearns spout magnets automatically trap and remove tramp iron buried in bulk materials entering plant.

Stearns electro spout magnets provide a strong, deep magnetic field — are automatically cleaned. Open conveniently located switch and tramp iron drops out — close switch and magnet is again in operation. No ladders to climb — no hand cleaning.

Reduce damage, cut insurance rates with a Stearns electro or permanent spout magnet. Write for Stearns Bulletins 92F and 97E today!

Stearns AAA spout magnet discharging tramp iron.

1067

MAGNETIC EQUIPMENT FOR ALL INDUSTRY

STEARNS MAGNETS

STEARNS MAGNETIC, INC. • 626 S. 28th Street, Milwaukee 46, Wis.

If you write maker identify as IEN - 6098

efficient COMPRESSOR COOLING

- Do you want to avoid over — or under — cooling?
- Do you want to save cooling water and lubricants?
- Do you want to increase the efficiency and life of your air compressor? . . . then install SARCO COOLING CONTROLS

Simple • Self-operated • Inexpensive

Ask for Bulletin No. 701

SARCO COMPANY, INC.

EMPIRE STATE BUILDING, NEW YORK 1, N. Y.
Represented in Principal Cities
SARCO CANADA LTD., TORONTO 8, ONTARIO

518

If you write maker identify as IEN - 6099

B&D ¾-inch Heavy-Duty Drill. Capacity: 7/16 to ¾-inch in steel . . . to 2-inches in hardwood $115.00

Black & Decker ¾-inch Heavy-Duty Drill with 40% More Power

TOWSON, MD.—Improved motor and gearing give this Black & Decker Heavy-Duty Drill 40% more power than previous models. This power makes it ideal for the bigger jobs . . . the heavier work in any plant or shop. Drill also has husky housing and is built with precision parts. Will give long, satisfactory service. Extra long switch handle and pipe handle make for complete control and balance. Price: $115.00 Other Heavy-Duty B&D Drills with ranges or sizes from ¼" up to 1¼-inches are also available for every need. See your local B&D Distributor for demonstration. For catalog No. 10, write: THE BLACK & DECKER MFG. CO., 608 Pennsylvania Ave., Towson 4, Md.

LEADING DISTRIBUTORS EVERYWHERE SELL

Black & Decker PORTABLE ELECTRIC TOOLS

"I WISH I HAD-"

An IEN reader is waiting for an answer to each item in this column.

This column concentrates upon reader requests for information on sources of supply for products or services or technical advice which we ourselves cannot supply, advises you of new patent-protected products for your possible manufacture, and available surplus of specialized products.

It is published to invite your suggestions and comments, which are forwarded immediately to the originator, just as we will be happy to publish similar problems for you.

CASTINGS . . "I wish I had a source for iron sand castings with extremely smooth surface finish. The castings range in size from 4 to 12 in. in diameter and from 1½ to 4 in. in thickness. We are located in Ohio." **IEN W-44**

ENGINEER . . "I wish I had contact with a manufacturer requiring the services of a product engineer with 15 years of experience in design, research and development of electromechanical machinery, instruments and apparatus. I am an MIT graduate Mechanical Engineer and am registered professionally in Massachusetts." **IEN W-45**

HEAT TREATING . . "I wish we had contact with a company desiring to sell us a dry hydrogen heat treating furnace with a generator or an ammonia cracking device to handle a work basket about 24 by 8 inches, Chicago." **IEN W-46**

LAYOUT . . "I wish we had a source of supply for a flexible template with which to duplicate curved outlines full size quickly. We did have one that could be set and locked to a desired shape, contour curve or radius and then transferred for construction or checking purposes. It was made by R. J. Turner Company, but this company is no longer in business according to our best information. Now we are looking for a new source. We are located in Los Angeles." **IEN W-47**

GAS OVEN . . "I wish we had a source for a used gas fired oven measuring about 2 by 2 by 2 ft. with heating capacity to 500 or 600 deg. F. We are in Albany, N. Y." **IEN W-48**

PURCHASING . . "I wish I had contact with a medium size mid-western business or manufacturer desiring the services of a purchasing executive. I am currently employed as an assistant purchasing agent for a manufacturer having both commercial and defense production and am located in the middle west." **IEN W-49**

TRADE NAME . . "I wish we knew the name of the manufacturer of a sealing material trade named Glypac. We are in Benton Harbor, Mich." **IEN W-50**

(Please turn to Page 125)

If you write maker identify as IEN - 6100

DeBothezat "Hy-V" Air Jets project a concentrated stream of cool air as far as 60 feet WITHOUT DUCTS. Models available for wall or floor mounting, with fan wheels 18" to 30" in diameter. Nozzle velocity up to 5780 FPM. Write Dept. IEN-554 today for FREE CATALOG.

DeBothezat Fans

Division of American Machine and Metals, Inc.
EAST MOLINE, ILLINOIS

If you write maker identify as IEN - 6101

Simple — Accurate —

WEIR METERS

for Waste Measurement

- Float-and-cable Weir Meters developed by Foxboro offer simple, accurate measurement of liquid flow. Widely used in sewage, chemical processes, and industrial waste disposal.

The Foxboro Weir Meter is extremely simple. Operates through motion of float to measure head through V-notch, rectangular or Cippoletti weirs—or Parshall flumes. Motion is transmitted by cable to accurate recording or integrating mechanisms. Direct-reading, uniform flow scale—copper or plastic-covered floats.

Write for detailed information. **The Foxboro Company, 425 Neponset Ave., Foxboro, Mass., U. S. A.** Also Montreal, Canada. Branches in principal cities.

FOXBORO Reg. U. S. Pat. Off. WEIR METERS

If you write maker identify as IEN - 6102

A PAID NEWS ADVERTISEMENT BY FARRELLOY COMPANY

POWDERED METAL REPAIRS damaged galvanizing

To meet the need for restoring damaged galvanizing, especially that destroyed by welding, Farco Brand Z was developed to meet government specifications. This powdered metal containing flux has withstood 800 hours in a 20 per cent salt spray bath without rusting.

Farco Brand Z will actually remove scale from black iron, penetrate rust and grease, and deposit a zinc alloy coating. It does not leave a line of demarcation but amalgamates with galvanizing. It may be applied in flat, vertical and overhead positions, binding more tightly than hot dipped and will not flake off.

Powerful flux causes the metallic content to coat any metal including Copper, Stainless Steel, Monel, Bronze, Nickel, Chromium and Evanohm.

Being completely stable, it does not pick up moisture or deteriorate in can.

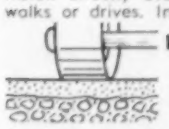
Farco Brand Z is available in 2 lb. cans at $3.00 each, 10% discount on six can lots, fob **Farrelloy Company,** 1249 N. 26th St., Philadelphia 21, Pa.

If you write maker identify as IEN - 6103

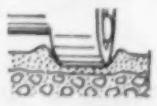
NEW FLOORS In 24 Hours

HARD MASTIC
BONDS PERFECTLY — NEVER COMES LOOSE
NO CHIPPING REQUIRED

install directly over your old concrete, wood, brick or stone floors, walks or drives. Interior or Exterior.



HEAVY DUTY • DUSTPROOF
WATERPROOF • RESTFUL
FIRE-RESISTANT • QUIET
SLIP PROOF • SANITARY



"PERMAFLEX" resurfaced areas will not rut under 3000 lbs. pressure per square inch.

Many users apply "PERMAFLEX" over new concrete to prevent wearing away of the concrete under truck wheels and thus preserve structural strength.

OLD MASTICS RUT and DENT under 300 lbs. per square inch.

The most severe trucking conditions in 1000 of the largest industrial plants show no destructive effect on "PERMAFLEX" after years of use. Every conceivable trucking condition was fully met.

AMAZING! UNBELIEVABLE! Until you try "PERMAFLEX"!

Users include U. S. Steel, General Motors, Chrysler, Remington Arms, General Electric, Westerg Electric, Westinghouse, Beechnut Packing and leading railroads.

Test 100 square feet and be convinced.

Write for literature and trial offer.

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Norfolk—2-9035
St. Louis—Lucas 3700
San Francisco—Gar. 1-3196

INSTALL COMPLETE 15c per square foot

PERMAFLEX PRODUCTS COMPANY
1846 NORTH FRONT STREET, PHILA. 22, PA.